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MOOSE FIRE SALVAGE AND REFORESTATION PROJECT

PHASE II

FINAL ENVIRONMENTAL IMPACT STATEMENT

MAY 2002

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MOOSE FIRE SALVAGE
AND REFORESTATION PROJECT - PHASE II

FINAL ENVIRONMENTAL IMPACT STATEMENT

May 17, 2002

I am pleased to present the following Moose Fire Salvage and Reforestation Project - Phase II Final Environmental Impact Statement (FEIS). Department of Natural Resources and Conservation (DNRC) has adopted the Moose Fire Salvage Project—Phase II Draft Environmental Impact Statement (DEIS) as the Final Environmental Impact Statement (FEIS), in combination with additions and errata to the DEIS; the text of comments received on the DEIS and DNRC's responses to the comments; and the proposed decision. Enclosed is a copy of the FEIS containing the additions and errata, comments and responses, and proposed decision. The FEIS document, in combination with the DEIS, constitutes the entire FEIS.

The proposed project is located in Coal Creek State Forest, approximately 20 miles north of Columbia Falls, Montana. The Department has analyzed five alternatives. No-Action Alternative A would not salvage burnt timber. Action Alternatives B through E would salvage approximately 4.4 to 8.9 million board feet of merchantable timber. Included in the FEIS is a proposed decision to choose Action Alternative D with a modification that adds the harvest units dropped between Action Alternatives B and D.

This FEIS addresses, primarily, burned areas that were not harvested with Phase I (Phase I harvested intensively burned areas from existing roads using conventional methods of harvesting). Also addressed is an area on Winona Ridge immediately adjacent to the fire that has extensive tree mortality caused by bark beetles.

I anticipate making my final decision on June 3, 2001.

If the final decision is made to proceed with an action alternative, this project will be presented to the State Land Board at their regularly scheduled meeting in June 2002.

Sincerely,

Robert L. Sandman

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Stillwater/Swan Units
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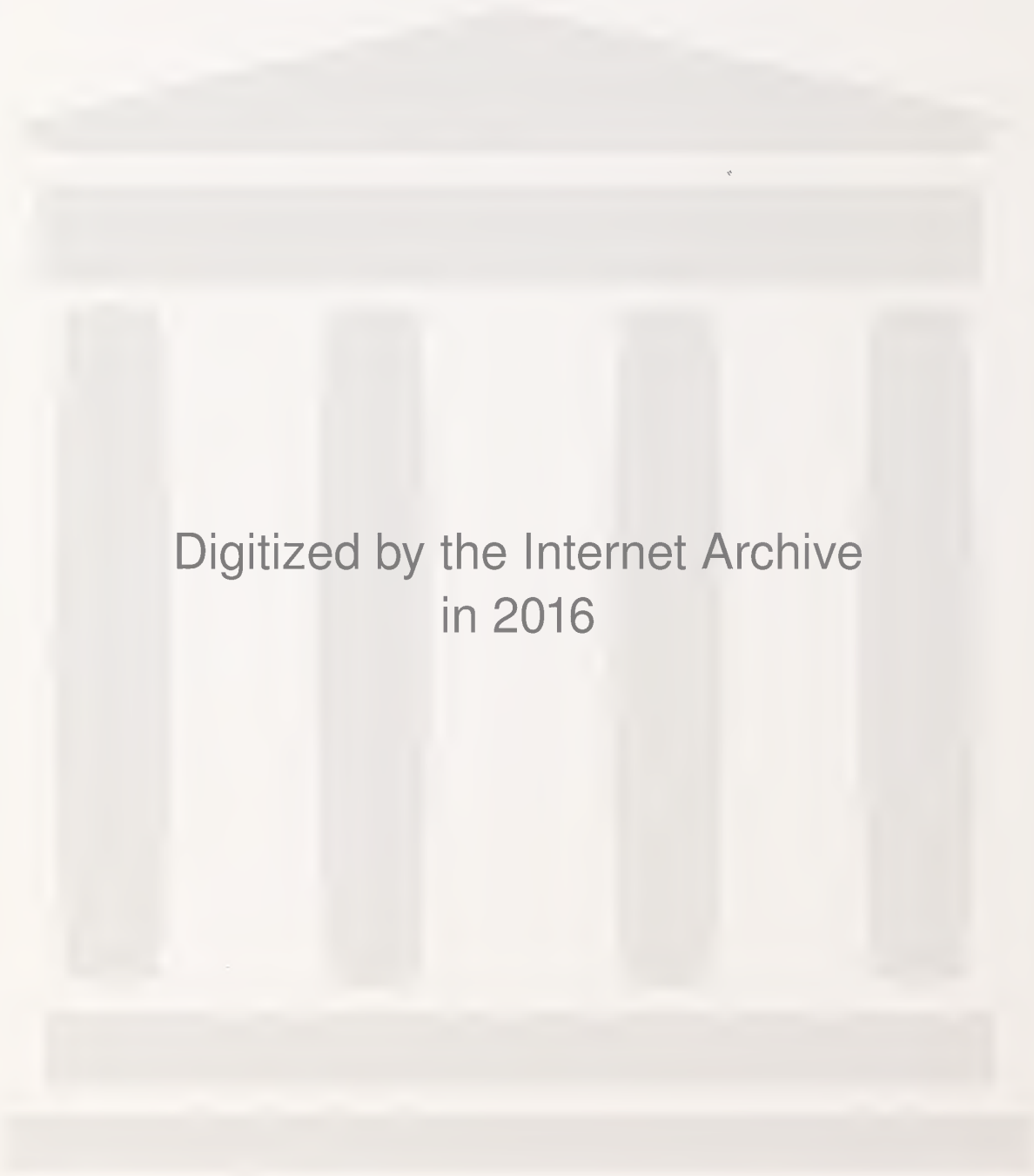
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MOOSE FIRE SALVAGE AND REFORESTATION PROJECT

PHASE II

ADDITIONS AND ERRATA

EXECUTIVE SUMMARY

Under Summary of Effects for Water Quality, Soils, and Fisheries on page 6: The last sentence on that page should be replaced with: *Therefore, effects are unlikely beyond what would occur naturally.*

CHAPTER I

Page I-3, second column, under Wildlife Concerns, first bullet: *Change old-growth-dependent species to old-growth-associated species.*

CHAPTER II

Page II-1, second column, second bullet, first sentence: *The number of temporary bridges should be changed from 2 to 3.*

Page II-2, first column, third full paragraph, after first sentence, insert the following sentence: *The Department is enjoined from using the 1998 Biodiversity Guidance to develop any timber sale projects.*

Page II-8, Table II-2: *The total number of acres should be changed from 912 to 913.*

Page II-10, Table II-3: *The total number of acres should be changed from 859 to 850.*

Page II-10, first column, first paragraph under Action Alternative D, the first sentence should read: *Action Alternative D would use a helicopter to yard logs in nearly all of the proposed harvest areas.*

Page II-10, first column, first paragraph under Action Alternative D, after the first sentence, insert: *Unit 6CR-OG would be yarded with a tractor along firelines that were constructed during Moose Fire suppression efforts.*

Page II-18, third column, under Direct Effects, second paragraph: *Change 912 to 913.*

Page II-19, third column, under Direct Effects, second paragraph: *Change 968 to 959.*

Page II-21 and II-22 in the table under Direct Effects for Action Alternatives C, D, and E, the word not was inadvertently omitted: … *in a year when the nest was inactive and the flight paths did not cross Cyclone Creek…*

Page II-22, fourth column, under Indirect Effects, Action Alternative C: *Change 912 to 913.*

Page II-22, fifth column, under Cumulative Effects, Action Alternative C: *Change 912 to 913.*

Page II-23, fourth column, under Indirect Effects, Action Alternative D: *Change 859 to 850.*

Page II-23, fourth column, under Indirect Effects, Action Alternative E: *Change 560 to 561.*

Page II-30, fourth column, under Indirect Effects, Action Alternative C: *Change 912 to 913.*

Page II-30, fourth column, under Indirect Effects, Action Alternative D: *Change 968 to 959.*

Blue insert title page after III-38: *Change Conditions to Consequences.*

Page III-15, second column, under Direct Effects Common to Action Alternatives B and D, second paragraph, last sentence, change to: Snags would… Action Alternative B; 913 acres with Action Alternative C; 959 acres with Action Alternative D; and…

CHAPTER III

Page III-7, first column, under Direct Effects Common to Action Alternatives B and C, change third sentence: *Temporary bridges would be installed… Cyclone Creek, which could result in some sediment entering the streams.*

Page III-7, first column, under Direct Effects Common to Action Alternatives B and C, add sentence at end of paragraph: *Therefore, adverse direct effects to spawning gravel and juvenile rearing habitat are unlikely.*

Page III-7, first column, last heading should read: *Indirect Effects of No-Action Alternative A.*

Page III-7, first column, paragraph under Indirect Effects of *No*-Action Alternative A, add the following sentences at the end of the paragraph: *Also, natural events could occur that would cause large debris flows, which could eliminate localized fish populations and create a barrier to fish passage. In addition, the possibility of a natural event that would cause a torrent of debris is unlikely in either Coal or Cyclone creeks.*

Page III-7, top of second column, first paragraph under Indirect Effects Common to Action Alternatives B and C, insert the following sentence at the beginning of the paragraph: *Effects under these alternatives are in addition to the effects disclosed under No-Action Alternative A.*

Page III-7, second column, first paragraph under Indirect Effects Common to Action Alternatives B and C, delete 2 sentences: *Also, natural events could occur that… of debris unlikely in either Coal or Cyclone Creek.*

Page III-7, under Indirect Effects Common to Action Alternatives B and C, insert the following sentence as a new paragraph at end of column: *By implementing the mitigation measures listed above, adverse indirect impacts to spawning gravel and juvenile rearing habitat are unlikely.*

Page III-8, first column, under Indirect Effects Common to Action Alternatives D and E, delete the second sentence: *However, some fine sediment… section in this chapter).*

Page III-8, first column, under Indirect Effects Common to Action Alternatives D and E, change the last sentence in the paragraph to read: The potential for a natural event… mentioned under *No-Action Alternative A would still exist under these alternatives.*

Page III-8, first column, under Cumulative Effects of No-Action Alternative A, insert 2 sentences at the beginning of the paragraph: *Past land-use activities, coupled with the natural geology of the Coal Creek drainage, have produced fine-sediment values at or near critical levels during the period of sampling starting in 1982. The natural response of the landscape to the Moose Fire is expected to aggravate this situation, at least in the next 1 to 5 years.*

Page III-8, second column, under Cumulative Effects Common to Action Alternatives B, C, D, and E, remove the first 2 sentences: *Past land use activities… situation, at least in the next 1 to 5 years.*

Page III-8, second column, under

Cumulative Effects Common to Action Alternatives B, C, D, and E, change the third sentence to: *Under these action alternatives, harvesting activities would not likely increase the cumulative amount of fine sediment delivered to the stream channel and, therefore, would not likely result in additional adverse cumulative impacts.*

Page III-15, second column, first bullet, change the heading to: *Direct Effects Common to Action Alternatives B, C, D, and E.*

Page III-16, second column, second bullet, change line 5 to: *planting. In addition, no funds would be…*

Page III-22, first column, first full paragraph, last sentence, the word <u>are</u> was omitted: *The risks of increased wolf mortality or decreased wolf reproduction due to disturbance <u>are</u> minor and less that Action Alternative B.*

Page III-24, second column, first paragraph, second sentence, the word <u>be</u> was omitted: *The effects of Action Alternative E are expected to <u>be</u> minor…*

Page III-25, second column, second full paragraph, first sentence: *change actopm to action.*

Page III-29, first column, under INDIRECT EFFECTS, first paragraph, last sentence: *Change TABLE III-?? to TABLE III-8.*

Page III-30, first column, last paragraph, update: *Permits for commercially gathering mushrooms on State land within the Moose Fire perimeter are being sold at the Hungry Horse Ranger District, with rates ranging from $30 for a 7-day permit to $150 for the entire season.*

Page III-33, first column, replace the paragraph under Direct and Indirect Effects Common to Action Alternatives B, C, D, and E with the following paragraphs:

Action Alternatives B, C, D, and E would each salvage trees with a helicopter. Helicopter yarding would disturb approximately 5 percent of the helicopter units and would have a negligible risk of erosion or sediment delivery.

Ground-based skidding would disturb approximately 15 to 20 percent of the tractor units; most or all of this disturbance would lower the productivity in the trails. Downhill cable yarding would disturb approximately 5 to 20 percent of the cable units in the corridors where logs are dragged. Nearly half of the ground disturbed in cable corridors would have decreased productivity.

TABLE III-10—SUMMARY OF DIRECT EFFECTS OF ALTERNATIVES ON SOILS lists the direct and indirect impacts expected for each of the proposed action alternatives.

Page III-33, replace Table III-10 with the following table:

	ALTERNATIVE				
	A	B	C	D	E
Acres of salvage	0	1,311	913	959	561
Acres of helicopter yarding	0	528	146	955	561
Acres of cable yarding	0	90	71	0	0
Acres of tractor yarding	0	693	696	4	0
Acres trafficked by skid trails[1]	0	139	139	0.8	0
Acres in yarding corridors[2]	0	9	7	0	0
Maximum acres of soil impacted[3]	0	144	140	0.8	0
Percent of tractor and cable units impacted	0	18	18	20	0

[1]15 to 20 percent of ground-based units
[2]5 to 10 percent of cable units
[3]75 to 100 percent of skid trails and 25 to 50 percent of cable corridors

APPENDIX A—REFERENCES

The following references were omitted in the DEIS and need to be inserted:

Chou, Yue Hong, Susan G. Conard, Peter M. Wohlgemuth, 1994. <u>Analysis of Postfire Salvage</u>

Logging, Watershed Characteristics, and Sedimentation in the Stanislaus National Forest. In: Proceedings of the ESRI Users Conference, 1994, Palm Springs, Ca.: 492-499.

DNRC, 2000. Environmental Assessment for the Sula State Forest Fire Mitigation Salvage and Recovery Project. DNRC Hamilton Unit Office, Sula State Forest, November, 2000.

DNRC, 2002. Soil Monitoring Report for the Sula State Forest Fire Restoration and Salvage. DNRC Forest Management Bureau, February 2002.

Haupt, H.F., et al., 1974. Forest Hydrology Part II Hydrologic Effects of Vegetation Manipulation. USDA Forest Service, Region 1. Missoula, MT.

McIver, James D., Lynn Starr, 2000. Environmental Effects of Postfire Logging: Literature Review and Annotated Bibliography. USDA PNW-GTR-486.

Omang, R. J., 1992. Analysis of the magnitude and frequency of floods and the peak-flow gauging network in Montana. USGS WRIR 92-4048.

APPENDIX B—STIPULATIONS AND SPECIFICATIONS

Page B-2, first column: *Delete recommendation 11.*

Page B-2, second column: *Delete recommendation 20.*

APPENDIX D—FISHERIES ANALYSIS

Page D-16, second column, under Sediment, add the following sentence to the end of the paragraph: *Therefore, adverse direct effects to spawning gravel and juvenile rearing habitat are unlikely.*

Page D-18, under Indirect Effects Common to Action Alternatives B and C, bottom of first column and top of second column: *Delete entire Physical Habitat section.*

Page D-18, under Indirect Effects Common to Action Alternatives B and C, Sediment, second paragraph, change the second sentence to read: *If either Action Alternative B or C were implemented, indirect fine-sediment delivery to the stream channel would be unlikely as a result of SMZs and salvage-harvest mitigation measures.*

Page D-21, under Cumulative Effects Common to Actions Alternatives B, C, D, and E, Sediment, replace the first sentence with the following sentence: *Under Action Alternatives B, C, D, and E, harvesting activities would not likely result in additional cumulative fine-sediment delivery to the stream as a result of harvesting operations and due to SMZs and salvage-harvest mitigation measures.*

APPENDIX F—WILDLIFE ANALYSIS

Page F-13, first column, under Indirect Effects of Action Alternative C to Canada Lynx, second sentence of paragraph: *Change 912 acres to 913 acres.*

Page F-13, first column, under Indirect Effects of Action Alternative D to Canada Lynx, second sentence of paragraph: *Change 859 acres to 850 acres.*

Page F-15, first column, under Cumulative Effects of Action Alternatives C and E to Canada Lynx, second line from the bottom of the page: *Change 912 acres to 913 acres.*

Page F-22, first column, second paragraph, first sentence: *Change 912 acres to 913 acres.*

Page F-36, first column, under Indirect Effect to Fisher Common to Action Alternatives B, C, D, and E, first paragraph, first sentence: *Change 912 acres to 913 acres.*

Page F-37, first column, under

Cumulative Effects to Fishers Common to All Action Alternatives, first paragraph, first sentence: *Change 912 acres to 913 acres; change the first Action Alternative E to Action Alternative D.*

APPENDIX I—SOILS ANALYSIS

Page 3, second column: *Change table number from I-10 to I-1.*

Page 3, second column, the table should be replaced with the following table:

	ALTERNATIVE				
	A	**B**	**C**	**D**	**E**
Acres of salvage	0	1,311	913	959	561
Acres of helicopter yarding	0	528	146	955	561
Acres of cable yarding	0	90	71	0	0
Acres of tractor yarding	0	693	696	4	0
Acres trafficked by skid trails[1]	0	139	139	0.8	0
Acres in yarding corridors[2]	0	9	7	0	0
Maximum acres of soil impacted[3]	0	144	140	0.8	0
Percent of tractor and cable units impacted	0	18	18	20	0

[1]15 to 20 percent of ground-based units
[2]5 to 10 percent of cable units
[3]75 to 100 percent of skid trails and 25 to 50 percent of cable corridors

MOOSE FIRE SALVAGE AND REFORESTATION PROJECT

PHASE II

RECORD OF DECISION

PROPOSED DECISION

This portion of the Final Environmental Impact Statement (FEIS) presents the proposed decision by Robert L. Sandman, Manager, Stillwater/Swan River State Forests, Department of Natural Resources and Conservation (DNRC).

The scope of the proposed decision is limited to actions associated with the proposal of the Moose Fire Salvage and Reforestation Project - Phase II. The proposed decision is site specific and is neither programmatic nor a general management plan for Coal Creek State Forest.

An interdisciplinary team (ID Team) has completed the Draft Environmental Impact Statement (DEIS) and prepared the Final Environmental Impact Statement (FEIS) for the Moose Fire Salvage and Reforestation Project - Phase II proposal. Mr. Sandman proposes the following decision after a thorough review of the DEIS, project file, public correspondence, corrections and additions made by DNRC that were reflected in this FEIS, Department policies, and the State Forest Land Management Plan (SFLMP).

1. **PROPOSED ALTERNATIVE SELECTION**

Five alternatives were developed and are presented in the FEIS:

- No-Action Alternative A includes existing activities, but does not include a timber sale;
- Action Alternative B harvests approximately 8.9 million board feet (MMBF) from 1,311 acres, constructs 3.4 miles of new road, repairs 2.8 miles of existing road, and installs 3 temporary bridges;
- Action Alternative C harvests approximately 4.8 MMBF from 913 acres, constructs 3.4 miles of new road, repairs 1.25 miles of existing road, and installs 3 temporary bridges;
- Action Alternative D harvests approximately 8.5 MMBF from 959 acres, constructs no new roads, and repairs 1.6 miles of existing road; and
- Action Alternative E harvests approximately 4.4 MMBF from 561 acres, constructs no new roads, and repairs 1.6 miles of existing road.

(Alternatives A through E are presented in the *DEIS, pages II-1 through II-13*).

To varying degrees, each alternative meets the project objectives and could be chosen.

The proposed decision is to select Action Alternative D with the following modifications:

- The additional 352 acres

contained in Action Alternative B (Units 18W, 25W, and 6CM) will be included as optional volume to the timber sale purchaser. If DNRC's market estimates are low, it will be prudent to allow these acres to be harvested, even if the material is sold at a nonsawlog rate. However, all of the additional acres must be harvested using helicopters or existing roads in compliance with mitigations, stipulations, and the requirements that have already been stated for Action Alternative D.

- Mitigations and specifications identified in the FEIS will be implemented as prescribed.
- The 8.9 MMBF of burned merchantable timber will be presented to the State Land Board in 2 contracts. Units 1SC, 6CR, 13W-OG, 28W-OG, and the DF Bark Beetle Salvage area, which total 4.2 MMBF, will be included in 1 contract. Units 13W, 15W, 17W, 18W (optional), 20W, 23W, 24W, 25W (optional), 27W, 28W, 29W, 3DH, 6CM (optional), 7CM, and 7CR, totaling 4.7 MMBF, will be included in the other contract; the optional units for purchase, totaling .4 MMBF, will have a price set by DNRC prior to bidding.

I have compared the modifications and specifications proposed for Action Alternative D to the analysis presented in the FEIS and have concluded that the modifications and specifications are within the scope of the FEIS.

The rationale for this decision is presented in item 4.

2. **RELATIONSHIP OF THE OBJECTIVES TO THE PROPOSED DECISION**

   a. If sold in today's market, Action Alternative D will yield an estimated return of between $447,000 to $663,000 for the school trust fund and $124,000 to $258,000 for the public building trust fund.

   b. The timber sale will contribute an estimated 8.5 to 8.9 MMBF to DNRC's annual timber-harvest requirements.

   c. Identified emergency rehabilitation measures will be implemented.

   d. A reforestation and monitoring plan will be implemented.

3. **RELATIONSHIP OF THE ISSUES AND PUBLIC COMMENT TO THE PROPOSED DECISION**

   It is important not to confuse the impacts of the Moose Fire with the additional impacts that may occur as a result of the proposed project. Project impacts are considered both directly and cumulatively with fire effects in this decision.

   a. Watershed and Hydrology (*DEIS, pages III-2 through III-5)*

      The helicopter yarding under Action Alternative D will not have a direct effect on water yield and almost no risk of sediment delivery, though removing burnt trees from slopes could indirectly cause increased erosion. The additional 4 acres of tractor yarding in Unit 6CR will increase the risk of erosion and sediment delivery by disturbing burnt soil on skid trails; this risk will be reduced or eliminated by using erosion-control measures.

   b. Fisheries *(DEIS pages III-6 through III-9*)

      Fish populations in the Coal Creek watershed will not be directly affected since harvesting activities are located well away from the fish-bearing streams. Some fine sediment is likely to

reach stream channels as a result of the increased water yield caused by the wildland fire; a natural event could cause a large debris flow.

By timing the project, utilizing wider streamside management zones (SMZs), following best management practices (BMPs), locating harvest units away from stream channels, and applying erosion-control measures to postfire restoration, harvesting activities will not substantially impact the cumulative amount of fine sediment delivered to the stream channel.

c. Vegetation (*DEIS, pages III-10 through III-19)*

Harvesting will immediately reduce the number of fire-weakened and beetle-infested trees, which, in turn, will reduce the potential for a large bark beetle outbreak and the amount of trees that will die from bark beetle attack in the future. The risk of bark-beetle infestations from surrounding areas that were burned, but not treated, will be reduced.

Using forest improvement (FI) funds collected with the timber sale, western white pine, western larch, and ponderosa pine trees will be planted, thus possibly affecting cover types. These changes, plus changes that occur naturally with fires, will cumulatively affect the cover types.

The number of snags will be reduced over 1,311 acres. Two to five of the largest snags available, located at least 200 feet from roads, will be retained per acre. Cumulatively, Phase II and the other timber-harvesting projects on State land in the area will have reduced snags on a total of 2,744 acres.

Down woody material and the associated fire hazards will be reduced within the harvest units. In addition, the areas that experienced mixed-severity burns will have substantially reduced stand density and ladder fuels. Cumulatively, fire hazards in these areas will be reduced for several decades.

Harvesting will occur on 398 acres that currently meet DNRC's old-growth definition (DNRC has formally adopted the old-growth definition proposed by Green et al., Old Growth Forest Types of the Northern Region, R-1 SES 4/92, USDA Forest Service, Northern Region, Missoula, MT). Postharvest, 382 acres will still contain enough large-diameter trees to meet the requirements of the old-growth definition. Old-growth attribute levels will range from medium to low following harvesting. Many large, live trees will be retained. In addition to this project, 151 acres of old growth were harvested by the Cyclone/Coal 99' Timber Sale.

Seedbeds for noxious weeds will be created due to ground disturbance caused by logging equipment. Mitigation measures will reduce the risk of noxious-weed establishment.

d. Wildlife (DEIS, pages III-20 through III-27)

The effects to boreal owls are expected to be negligible.

Risks to gray wolves, fishers, bald eagles, Canada lynx, and black-backed woodpeckers will be minor. Beyond the reduction caused by the fire,

additional hiding cover for gray wolves, their prey, and fishers will not be removed with this project.

Localized impacts to pileated woodpeckers could occur due to the removal of nesting and foraging habitat.

A moderate level of risk to grizzly bears is expected from habitat affected by increased road use, but the risk is lower than that anticipated with ground-based yarding and road construction. Additional hiding cover, beyond the reduction caused by the fire, for grizzly bears will not be removed with this project.

The reduction of black-backed woodpecker habitat will probably result in woodpeckers shifting use to other nearby suitable habitat.

e. Economics (*DEIS, pages III-28 through III-29)*

In today's market conditions, the selected alternative will generate $571,000 to $921,000 in trust revenue. In addition, the sale will produce $441,720 to $464,134 in FI collections. The revenue generated by this project represents support for 74 to 110 students for 1 year and 89 to 94 local jobs for 1 year.

f. Recreation (*DEIS, pages III-30 through III-31)*

As a whole, revenue from General Recreational Use Licenses is not expected to change as a result of implementing Action Alternative D. Recreationalists may be inconvenienced or temporarily displaced by project-related activities. Due to safety concerns during timber harvesting, hauling, and road construction activities, some road segments and harvest areas could be closed to mushroom gathering.

g. Soils (*DEIS, pages III-32 through III-34*)

Helicopter yarding will disturb approximately 5 percent of the harvest unit areas, causing minimal levels of soil erosion and little risk of sediment delivery. Erosion-control mitigation measures will lower the risk of cumulative effects to soil productivity on the 4 acres harvested with ground-based equipment.

h. Irretrievable and Irreversible Commitments (*DEIS, page 34)*

The salvage of dead and dying trees will irretrievably reduce the number of snags in harvest units. A short-term decrease in soil productivity is expected on .8 acre within 1 harvest unit.

The initial loss of snags due to harvesting will not be irreversible. Natural and hand-planted regeneration will promote the establishment of new trees. Artificial regeneration of western larch will promote the eventual establishment of wildlife snags.

The initial decrease in soil productivity will not be irreversible. Over time, the decay of down woody material, weathering of mineral soil, freeze-thaw action, and vegetative rooting will reestablish productive soils on the .8 acre of decreased soil production.

4. **RATIONALE FOR THE PROPOSED DECISION**

a. DNRC is required by State law (*Section 77-5-207, Montana Codes Annotated [MCA]*) to establish a salvage program that provides for the timely salvage logging of dead or dying timber threatened by insects, diseases, wildfires, or windthrow on State forests. Action Alternative D provides for the timely salvage and value recovery of the available dead and dying timber affected by insects, diseases, wildfires, or windthrow in and immediately adjacent to the Moose Fire.

b. The lands involved in this project are held by the State of Montana in trust for the support of specific beneficiary institutions. DNRC is required by law to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run (*Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X, Section 11; and, 77-1-202, MCA*). The SFLMP provides the management philosophy and framework to evaluate which alternative will maximize real income while sustaining the production of long-term income. Given SFLMP direction, Action Alternative D is the alternative that recovers the greatest value.

c. The *2001 Moose Creek Fire Survey*, conducted by the Bureau of Business and Economic Research at the University of Montana, found that: "While 87.2 percent of adult Flathead County residents support salvage timber harvests in State forests, only 8.3 percent support doing nothing."

d. DNRC is currently enjoined from harvesting old-growth stands that were included in timber sales developed under DNRC's 1998 Biodiversity Guidelines; this project was not developed under those guidelines. Although Action Alternative D includes salvage harvesting within 398 acres currently classified as old growth, 382 acres will retain sufficient large, live trees to meet DNRC's old-growth definition after salvage harvesting. Due to the ongoing development of rules, DNRC is in a state of flux regarding how much old growth to retain on school trust lands. Using the best available science, SFLMP commitments, and Senate Bill 354, DNRC's future commitment is likely to range between 0 and 50 percent of the average proportion that would be expected to occur with natural processes on similar sites. Postharvest, Coal Creek State Forest will retain a sufficient amount of old-growth acres to exceed acceptable estimates of naturally occurring amounts.

e. Action Alternative D removes potential bark-beetle host trees in high-risk stands, including those stands within the fire area still meeting DNRC's old-growth definition. This will reduce the risk of infestations in the adjacent unburned stands, including 935 old-growth acres in the South Coal area and 409 old-growth acres of the Coal Creek riparian area. Action Alternative D also includes strategically placing bubble caps of antiaggregate pheromone (MCH) to prevent large buildups of bark beetles in these areas. The

combination of salvaging and bubble-cap placements provides the best chance to combat the predicted bark-beetle outbreak from infecting valuable, unburned adjoining stands.

f. Salvaging to the level prescribed by Action Alternative D will reduce the future risk of catastrophic wildland fires.

g. Comments received on the DEIS that recommended an alternative were primarily split between Action Alternatives B and E. Ironically, as modified, Action Alternative D represents the middle ground. Similar to Action Alternative B, Action Alternative D maximizes the salvage and recovery value of dead and dying trees, but, like Action Alternative E, it does so with a lower risk to valuable resources such as wildlife, threatened and endangered species, water quality, and long-term productivity. Although Action Alternative D includes the recovery of value from stands still meeting the old-growth definition, it does so without harvesting healthy live trees from those stands or building additional roads into those stands. This action will also help protect important adjoining unburned stands. This type of approach is promoted within the SFLMP and is embodied in DNRC's management philosophy.

h. The road systems designed for Action Alternatives B and C are primarily intended for temporary use and follow-up treatments. While they were designed with the concepts of transportation planning on a landscape scale in mind, adjustments and rerouting would probably be necessary for the future road systems intended for the management of Coal Creek State Forest. Also, due to the effects of the Moose Fire, some time will likely pass before significant additional timber harvesting could be conducted. Continuing impacts from these road systems would exist until a more detailed study determines appropriate construction, mitigations, closures, and obliterations. Action Alternative D avoids the need for this ongoing effects management.

Summary

Overall, Action Alternative D best complies with the Agency's legal requirements and the SFLMP. The timber salvage, combined with reforestation actions, balances the recovery of value with actions to provide for long-term revenue while limiting high-risk effects to other valuable resources. The risks of mortality in valuable adjoining unburned stands by bark beetle infestations and wildfires from fuel buildup are also reduced.

COMMENTS

AND

RESPONSES

COMMENTS AND RESPONSES
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This section contains comments received from interested parties on the Moose Fire and Reforestation Project—Phase II DEIS and DNRC's responses to those comments. A response is not required for those portions of the comments that stated either an opinion or a recommendation. All comments were carefully reviewed. DNRC appreciates both the time and thought that was involved in producing the comments. The decisionmaker will carefully consider each received comment to aid him in deciding on a course of action for this project.

(1)

MONTANA LOGGING ASSOCIATION

April 5, 2002

Montana DNRC
Attention: Brian Manning
Stillwater State Forest
P.O. Box 164
Olney, MT 59927

RE: Moose fire/Coal Creek State Forest Rehabilitation II DEIS

These comments are submitted on behalf of the membership of the Montana Logging Association, all of whom own and operate family-owned timber harvesting and log hauling businesses. Thank you for the opportunity to comment on the DNRC's second plan for rehabilitation in the Coal Creek State Forest. We fully support the Department's commitment to act expeditiously.

We are somewhat disappointed with the level of analysis regarding the No Action Alternative. In our January Scoping Comments we suggested the following:

Provide an in-depth analysis of the "no action alternative"

1 *The Department should thoroughly analyze the "No Action" alternative. Considerable soil erosion will occur in the fire-impacted areas regardless of what forest managers do or do not do. However, doing nothing to stabilize slopes, provide erosion barriers, or jump-start revegetation will likely have the most significant and cumulative impacts of any alternative you propose.*

The effects analysis for the no action alternative should include present and future impacts on water quality & fisheries, elk and deer habitat, future fire risk as trees blow down, recreational opportunity and financial returns to the legal beneficiaries both in the short and long term. The public safety aspect of no action should also be thoroughly analyzed. The no action alternative should also be scrutinized as to the risk of insect infestations and the probability of further tree mortality not only on state trust lands, but on adjacent private lands as well.

The cumulative impact to other private landowners of the no action alternative should be part of the analysis, and should include future risk of fire and the increasing populations

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1. The effects of the Moose Fire to water quality were discussed in the *DEIS, page III-2*, and *APPENDIX C—HYDROLOGY ANALYSIS, pages 2 through 6*. The effects of No-Action Alternative A were discussed in the *DEIS, pages III-3 though III-4* and *APPENDIX B—STIPULATIONS AND SPECIFICATIONS, pages B-6 and B-9*. These discussions of the effects of No-Action Alternative A include the discussions reported in the *EXISTING CONDITIONS* section of the report.

2. The expected impacts to sediment delivery from all proposed alternatives were displayed in *APPENDIX C—HYDROLOGY ANALYSIS, pages 6 through 10*, and the *DEIS, pages III-3 through III-4*. DNRC could find no research or study that demonstrated a reduction in sediment delivery or a reduced risk of erosion resulting from any method of yarding logs. As a result, the analysis showed increased risks of sediment delivery (to varying degrees) over the existing conditions for all action alternatives, but no additional increase beyond existing conditions for No-Action Alternative A.

3. This analysis is beyond the scope of this project. A brief narrative of some of the potential direct effects of the fire to wildlife species was discussed on in *APPENDIX F, page F-2*. Several studies were cited that conducted these types of surveys. After the fires of 1988 in Yellowstone National Park, *French and French (1996)* found low mortality rates (less than 1 percent) for large mammals (elk, mule deer, moose, bison, and black bears). The grizzly bear mortality during the Moose Fire was the first documented mortality of a grizzly bear killed by a fire. Based on the above information, any direct mortality to wildlife, especially large mammals, from fire is believed to be low; however, actual impacts to wildlife are

of spruce and Douglas fir bark beetles. Similarly, analysis of the potential beetle outbreaks on adjacent federal lands and their potential effect on State Trust Lands should be considered in the record.

Some of these issues were addressed in the DEIS Effects Analysis and we realize that the intent of the analysis is to elucidate the probable effects of Action Alternatives. We believe it is very important to assess the complete impacts of the No Action Alternative in the FEIS. Similarly, with the implementation of Action Alternatives, there are numerous positive effects that are not disclosed in the DEIS. We pursue these issues, not to be "picky", but because we believe that the MEPA process is important and should be used to discover and disclose the likely effects of the Action – including No Action. In these litigious times, it is imperative to build a complete record of the likely effects.

We are summarizing these perceived deficiencies below by Resource:

Hydrology – Page II-14

2 **Deficiency in analysis – all Action Alternatives:**
Surely the implementation of the action alternatives will result in a long-term reduction in sediment delivery over the effects of the No Action Alternative? This is not indicated in the analysis summary.

Fisheries – Page II-15

Deficiency in analysis – No Action Alternative; Action Alternatives:
No Action will leave the heavy fuels in place for a possible future re-burn in heavy down fuels and prolific conifer regeneration. This would have a severe negative effect on fisheries resources in the future. Similarly, the implementation of the Action Alternatives will reduce fuel loading and lessen the risk of future catastrophic fire – positively benefiting the fisheries resource.

Vegetation – Page II-16, 17, 18, 19, 20

An excellent and accurate analysis of the No Action and Action Alternatives

Wildlife – General

Deficiency in analysis – Page F-2
3 Was an assessment made of the direct mortality (due to the fire) to the full compliment of wildlife and fish species present in the analysis area? Furthermore, was a similar analysis conducted for the fire mortality of listed T&E species? This analysis should be conducted
4 for the No Action Alternative to elucidate the effects from future catastrophic fires in the analysis area.

Wildlife – Bald Eagle – Page II-21, 22

uncertain.

4. Wildfires occur in the natural cycle of western forests, which alters forested habitat. However, the purpose of this analysis is to provide information on the anticipated effects of DNRC's proposed action alternatives. Although salvage harvesting would reduce fuel loading, the analysis, as required under MEPA, focused on the effects of salvage, not the numerous specific effects that occurred as a result of this fire or the potential effects of future fires. Therefore, the analysis is not deficient and provides the basis for an informed decision related to salvage harvesting the area of the Moose Fire.

5. "The effects of the proposed alternative, coupled with reduced habitat quantity and near-term quality, the expected impacts of mushroom picking, and potential for increased access of snowmobiles, especially in the spring, appear to pose a high risk of adverse effects to grizzly bears." (*APPENDIX F–WILDLIFE ANALYSIS, page F-27*)

6. This subject was acknowledged and discussed in *APPENDIX F–WILDLIFE ANALYSIS, pages F-4* and *F-43 through F-45*.

Deficiency in analysis – No Action and Action Alternatives:
Bald eagles need more to live than just nesting sites. No Action will negatively impact eagle populations for the same reasons as stated in Hydrology and Fisheries. The Action Alternatives, while temporarily disturbing the birds, will lead to positive habitat quality and stability in the future by reducing the risk of future fires that would negatively impact the eagles and their food sources.

Wildlife – Canada Lynx – Page II-22, 23

Deficiency in analysis – No Action and Action Alternatives
Canada Lynx populations will likely increase during the next few years as a result of either the No Action or Action Alternatives. Large populations of snowshoe hare will likely develop as a result of both the fire and the logging disturbance. While local Lynx denning habitat may be temporarily reduced as a result of the Action alternatives, the resulting conditions will be more stable and secure from future catastrophic fires.

Wildlife – Grizzly Bear – Page II-25, 26, 27

Deficiency in analysis – No Action and Action Alternatives
Direct mortality of a Grizzly Bear was documented as a result of the Moose fire. The No Action Alternative should disclose the risk to these animals from future catastrophic fires. Similarly, the benefits of the Action Alternatives – by reducing catastrophic fire potential – should be disclosed.

Deficiency in analysis – Alternative B – PageII-25 – Cumulative Effects
Alternative B will include the construction and reclamation of 3.4 miles of temporary roads; the reconstruction of 2.8 miles of private and existing (gated) roads (which, presumably would be "re-gated" and restricted use after the project completion); and the installation of three temporary bridges. As these roads will be reclaimed, gated and the
5 bridges removed, why is there a *"High degree of cumulative risk to grizzly bears"*?

Wildlife – Big Game – Page II-33

Deficiency in analysis – No Action Alternative
6 The post fire effect of the accumulation of large woody debris should be acknowledged. Big Game movement and use will be impeded by the accumulation of windthrown dead trees if no action is taken – *Lyon & Jensen, 1980.* We are pleased that you disclose that the implementation of the Action Alternatives will increase access to forage.

Economics - general:
We support the full implementation of Alternative B. There are numerous legislative statutes that require the Department, and the Land Board Trustees, to administer these trust lands to produce the largest measure of reasonable and legitimate return over the long run for these beneficiary institutions. These include the Enabling Act of February 22, 1889; 1972 Montana Constitution, Article X Section 11; Section 77-1-202, MCA;

Section 77-5-207, MCA; and SB 354, which requires that no asset, be set aside from management. In summary, SB 354 requires:

1. The affirmation of the intent of Section 11 of the state's Enabling Act and Article X and Sections 3 and 11 of the Montana Constitution.
2. Prohibit the deferral of management on State Forest Lands – unless funds are obtained for the affected beneficiary equal to the full market value of that management designation, treatment or disposition.
3. Prohibit the temporary or permanent designation of State Forest Lands as a natural area; open space; for old growth timber preservation; or as a wildlife management area – unless the full market value of the property interest or the revenue foregone is obtained.

There is also an existing court order (Cause No. BDV 2000-369) that prohibits the Department from implementing the existing 1998 Biodiversity Guidelines, until said Biodiversity Guidelines have been adopted through a formal rulemaking process under MAPA. The Order specifically states that: *"DNRC may not undertake timber sales based upon it* (Biodiversity Guidance). *Sales and harvests based on lawfully enacted rules may go forward."* These Guidelines suggest specific operational parameters for the management of "old growth" forests. With these guidelines in suspension, the default is the existing legislative statutes that direct the operation of state trust lands.

We believe that Alternative B is a balanced approach that mitigates any negative impacts on the human environment and satisfies the trust land mandate. The cumulative effect of the aforementioned statutes, court orders and the MEPA analysis, means that the Department has no choice but to implement Alternative B – unless funds are obtained for the affected beneficiary equal to the full market value of that management designation, treatment or disposition. If Alternative C were selected, $ 451,000 of equivalent compensation would have to be procured for the affected beneficiaries. If Alternative D were selected, $ 350,000 of equivalent compensation would have to be procured for the affected beneficiaries. And if Alternative E were selected, $ 621,000 of equivalent compensation would have to be procured for the affected beneficiaries.

Sincerely,

Patrick Heffernan, MLA Staff Forester

Cc. State Board of Land Commissioners; Director's Office & Trust Land Management Office - DNRC

THE CONFEDERATED SALISH AND KOOTENAI TRIBES
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S. Kevin Howlett
Mary Lefthand
Elmer "Sonny" Morigeau
Ron Trahan

04/09/2002

Brian Manning, Forest Management Specialist
Stillwater State Forest
DNRC
Box 164
Olney, MT 59927

RE: Moose Fire Salvage and Reforestation Project Phase II Draft EIS Executive Summery

Dear Mr. Manning,

Thank you for letting us comment on this project proposal. I do have a brief history of our Tribes and a few additional questions I'm submitting.
The Confederated Salish and Kootenai Tribes of the Flathead Indian Reservation entered into a treaty with the Federal Government in 1855. This treaty is called the HELLGATE TREATY OF 1855, signed July 16, 1855 at Council Groves, which is now Missoula, Montana.
Cultural resources are the Confederated Salish and Kootenai Tribes' most precious resources. These resources represent the identity of Tribal ancestry, history and customs which we are today. Traditional languages, songs, dances, prayers, ceremonies, hunting, hide-tanning, beading, fishing, plant gathering, food and medicine preparation, feasts, story-telling – all are still being done today. Cultural sites, which occur throughout the Reservation and aboriginal territories, are further evidence of these histories and customs. Protection of these irreplaceable resources is essential for sustaining the cultures of the Salish and Kootenai peoples.

1 Will your in house DNRC Archaeologist be doing any cultural resource inventory of this area?

2 And if this person does, what and how was it done?

3 Is there a plan in place for protective measures if there is an in-advertent disturbance of cultural resources? And if there is a plan in place what is the outline of its process?

Again thank you, if you have any questions feel free to call me at (406) 675-2700 ext. 1076.

Francis Auld
Tribal Preservation Assistant

1. DNRC's staff archeologist conducted an inventory of cultural resources over a large portion on the area where salvage harvesting is proposed within the Moose Fire on Coal Creek State Forest. A report detailing field methods used and results of that inventory can be found in *Cultural Resources Inventory Of A Portion Of The Coal Creek State Forest: Flathead County, Montana 2001.*

2. The procedure for inadvertent or unexpected cultural resource discoveries can be found in the Montana State Antiquities Act.

3. The following contract clause is located in the resource protection portion of the Timber Sale Contract: *"Cultural Resources: When operating on the gross sale area, if the purchaser, their contractors, subcontractors, or employees identify a cultural resource, other than those identified in Attachment A, the Purchaser shall immediately suspend all operations in the vicinity of the cultural resource. The purchaser will then immediately notify the Forest Officer. Operations may only resume if authorized by the Forest Officer."*

April 12, 2002

(3)

Robert L. Sandman, Manager
Stillwater/Swan Units
P.O. box 164
Olney, Montana 59927

Dear Mr. Sandman,

After reviewing the Draft of Moose Fire Salvage and Reforestation Project Phase Ii Environmental Impact Statement and having attended the February "Show Me Tour" I am in favor of Action Alternative B for the following reasons:

1. Logging will be done by the least expensive mode.
2. Most board feet of timber will be harvested.
3. The impact on water, vegetation and wildlife don't appear to be that much greater than the other alternatives.
4. By building the 3.4 miles of new road, the area will be more readily available to workers in the reforestation and reclamation crews – (less walking time and more productive time). This work should be completed before bridges are removed.
5. In the Hydrology section of Alternative D it indicates very little increase in sediment due to helicopter logging. I disagree because in hotly burned areas much dust will be raised by the rotors – who knows where it will blow.

Timber is a renewable resource and should be utilized to it's fullest. When disaster strikes (fire, disease, blight, insects) that timber should be harvested immediately before it looses its value. As a lifetime resident of Montana, I am interested in seeing the school systems receive maximum funds available.

Alternative B seems the most sensible and favorable plan.

Sincerely,

Darrell Meskimen

Darrell Meskimen
109 Sussex Dr.
Kalispell, MT. 59901

Thank you for providing input on this project. Your comments will be considered in the decision-making process.

Meskimen

INDIVIDUAL OR AGENCY COMMENTS FORM (NONWRITTEN)

PROJECT Moose Fire Salvage and Reforestation Project - Phase II

DATE Spril 23, 2002

PERSON/AGENCY COMMENTING Jack Richard

ADDRESS/PHONE# (406) 756-9668
TYPE OF CONTACT (PHONE, OFFICE VISIT, ETC.)

NAME OF PERSON RECEIVING COMMENTS Margaret Beck

COMMENTS (QUESTIONS, POINTS OF EMPHASIS, ETC.)

Fully in favor of salvage on Coal Creek State Forest. As far as the erosion on logging roads, the State Highway Department uses hydroseeding and this could be used on logging areas. As roads are closed they could be hydroseeded to prevent erosion and provide food for animals.

If all of the burned, dead, wind-blown damaged, and down wood were taken out, it would be a long time before a green healthy tree would need to be cut.

Jack would like to attend an open-house meeting if we have one.

Thank you for providing input on this project. Your comments will be considered in the decision-making process.

Joel G. Vignere
POB 194
Lakeside, MT 59922

Stillwater State Forest
Attn: Brian Manning
POB 164
Olney MT 59927

Dear Mr. Manning:

Re: Coal Creek Forest Salvage & Restoration Project, Phase II.

Having read recently in the Interlake about the problems involved in salvage logging the "tricky, steep ground", it occurs to me that one of the alternatives should be to just leave it alone. I realize this probably would not sit well with the "Oh my God it's going to waste crowd" but it might just be the right thing to do in this case.

I do think the two alternatives that would leave the old growth areas alone are well worth considering.

By the way, I was able to attend the second tour and was very impressed by the fine job that was being done. Hope you can keep up the good work. Thanks for the opportunity to comment.

Sincerely,

Joel G Vignere

Thank you for providing input on this project. Your comments will be considered in the decision-making process.

Vignere

FLATHEAD AUDUBON SOCIETY
P.O. Box 9173
Kalispell, MT 59904

4-25-02

These are Flathead Audubon's comments on Phase II Alternatives for the Moose Fire

We are prepared to **SUPPORT** Alternative **"C"**. We also have a few suggestions that would enhance, we believe, the acceptability of your proposals regarding salvage and old growth issues, now and in the future.

Salvage: If DNRC were to be able to retain a larger number of snags (>20"dbh) than the 2-5 mentioned, it would provide more adequate support for birds and other wildlife. As you know,
1 marking 2-5 snags / acre and ending up with that many, post harvest, may be difficult. We
2 believe an average of at least 5-7 snags (>20", if available) be left standing across the landscape. Clumping is an option and, remember: quality is more important than quantity. All trees (dead or alive) that have broken tops, signs of heartrot, or signs of excavating activity should be maintained for cavity nesting species. Outside of the SMZs, we believe you can take a full 50% of all dead trees 12"-20"dbh and still provide support for wildlife. Often snags < 12"dbh are utilized for foraging by the smaller birds.

Old Growth: As you are painfully aware, conservation of these areas is important. While two of the alternatives plan to stay out of areas that currently meet the Green old growth definition, the issue of areas that had been old growth prior to the burn should be addressed separately. These areas may have many dead trees that, because of their size and decay characteristics,
3 have very high value for wildlife, but low values at the mill. Please include in your EIS an analysis of these areas, and include pre-burn data on old growth characteristics (large live trees and snags) on acreage of structurally similar stands that burned but were not being considered for harvest. The structure of an old growth stand (be it black or green) is important. Leaving more large snags will provide habitat for a wider array of wildlife species, such as woodpeckers that eat large numbers of forest insect pests, and lynx (a listed species) who require large densities of downed logs for denning. We are not trying to save all snags or all trees. We strongly suggest that when doing post fire salvage in an old growth area, you leave more, larger snags and downed course woody material than the 2-5 mentioned.

4 **Demonstration Plots:** There is a technique used locally, by the Flathead Forestry Project, to illustrate management and gain public understanding of proposed actions. It is the use of a demonstration plot. Could DNRC use an area (5-10 acres) within the burned old growth area, to show how the State visualizes it looking, post treatment? If you get the public's trust, you will have fewer problems when dealing with sensitive issues.

The field trip of 2-21-02 was very good, even though we couldn't see some areas. Flathead Audubon wants to encourage DNRC to continue these trips. It is much easier to understand what one sees as opposed to what one reads. Thank you for the opportunity to comment.

Respectfully, D. Brent Mitchell

D. Brent Mitchell

Flathead Audubon-Conservation Ch.
(406) 756-8130

1. In most cases, the more snags that are left on the landscape, the more habitat that would be available for wildlife species, especially birds. The retention of 2 to 5 large snags per acre represents a compromise of timber production and wildlife habitat in the proposed units. Keep in mind, many smaller snags and unmerchantable trees/snags would be retained. The retention of 2 to 5 large snags is a minimum standard and applies only to the harvest units. Snag retention would be higher in the SMZs by retaining 50 percent of the existing trees/snags or 10 trees/snags within 50 feet (each side) of 100 feet of stream, whichever is higher (more than 87 trees or snags per acre). Additionally, all snags/trees would be retained within 100 feet of fish-bearing streams. If all these mitigations were averaged, an average of 5 to 7 snags per acre across the landscape should be exceeded. These calculations only apply to the harvest units. If the unharvested areas were considered, the number of large snags distributed across the landscape would be much higher. In addition to the existing snags that will be left, trees that survived the fire with minor damage or were not burned will also be retained (*DEIS, page II-3*). The criteria for determining which trees will be harvested are listed in the *DEIS, pages II-3 and II-4*. The number of surviving trees or trees with minor damage increases in areas burned less severely. Retained surviving trees and trees with minor damage would act as snag recruits, eventually dying and providing future wildlife habitat as snags.

2. Typically, trees with these characteristics are generally, but not always, unmerchantable and would be left (*page F-39*).

3. Old Growth - The analysis for both old growth

and wildlife reviewed the prefire database in regard to the estimated amounts and distribution of old-growth stands. Further data is available in the project file. A summary of the analysis for current old-growth conditions was based on DNRC's stand-level inventory and extensive field reconnaissance. The effects analysis in regard to the amounts and distribution of old growth from the proposed actions was limited to estimates of current old-growth conditions (see *APPENDIX E–VEGETATION ANALYSIS, page E-6*). Estimates of current conditions regarding amounts and distributions of snags by area in respect to fire intensity are displayed in the *APPENDIX E–VEGETATION ANALYSIS, pages E-6 and E-7. APPENDIX F–WILDLIFE ANALYSIS* considered this information and the effect of harvesting in areas that had a high density of large-diameter snags.

4. We are very interested in your recommendation for demonstration plots. The project's time frame prohibits an extended delay period before the second phase of this salvage would need to be implemented. However, last fall we did install many photo points and tagged various trees to be monitored for survival. The photo points were taken in areas where salvage harvesting occurred and in areas where harvesting will not take place. We could incorporate these photo points and the monitored trees into demonstration plots to compare the postfire succession of trees in areas where salvage harvesting occurred with areas where salvage harvesting did not take place.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
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M.42

April 23, 2002

Mr. Brian Manning, Forest Management Specialist
Stillwater State Forest
Department of Natural Resources and Conservation
PO Box 164
Olney, Montana 59927

Dear Mr. Manning:

The Fish and Wildlife Service(Service) has reviewed the Draft Environmental Impact Statement (DEIS) on the Moose Fire Salvage and Reforestation Project - Phase II and offers the following comments for your use and consideration when preparing the final EIS.

General Comments

The Service has provided technical assistance to the Department of Natural Resources and Conservation (DNRC) relating to the resources under their stewardship and how threatened (T), endangered (E) and candidate (C) species may be impacted on their stewardship lands.

The Service has concerns regarding the Moose Fire Salvage and Reforestation Project Phase II DEIS. The concerns will include elements for all of the alternatives because a preferred alternative has not been selected at this time.

1 Our major concerns regarding the DEIS include: no plan for restoring habitat for T&E species, lack of data on sediment erosion and sediment delivery and no information on impacts to the watershed by private and federal landowners.

All restoration efforts for this project are focused on silvicultural needs. While it is understood that restoration for silvicultural needs may benefit T&E species, we recommend that other restoration efforts for T&E species be examined. Specifically, restoration for bull trout habitat because this is a core area for bull trout and the population has declined to critical levels in Coal Creek and Cyclone Creek, with no redds reported in either stream in 2001 (DEIS).

(1) The DEIS stated that impacts due to erosion and sediment delivery to streams are expected to increase. Although this was stated it was not possible to assess the extent of this increase because data was not presented in the DEIS. Additionally, it is not possible to assess erosion and sediment delivery to streams associated with each alternative. The Service recommends that data be included in the final EIS so that an assessment of the increase in erosion and sediment delivery for each alternative can be made.

The Service also recommends a biological evaluation of potential impacts to bull trout. The biological evaluation would assess the impacts due to sediment increases as well as habitat factors such as large

1. The DEIS reported a qualitative analysis of sediment delivery based on a risk assessment of erosion and sediment delivery (*DEIS, pages III-3 through III-4, APPENDIX C—HYDROLOGY, pages 6 through 10*). Based on the site-specific locations of proposed salvage and road-construction activities, distance from streams, and mitigation measures planned, this level of analysis is appropriate. As road construction, stream crossings, and ground-based yarding increase, the risk of erosion and sediment delivery increase. However, with each action alternative, mitigation measures implemented would limit the potential for sediment delivery to creeks; potential impacts would be minor, short-term, and would have a low risk of affecting downstream beneficial uses. As referenced in *APPENDIX C—HYDROLOGY, Chou* conducted a study of postfire logging in 1994. Sediment was collected and measured in 22 watersheds and control watersheds. The conclusions of this quantified analysis found no detectable change in sedimentation. As a result, a risk-assessment analysis is appropriate to determine the impacts to sediment delivery for the action alternatives.

2. Impacts associated with fire suppression and fire rehabilitation were discussed in the *DEIS, page III-32*, and *APPENDIX I—SOILS ANALYSIS, page 2*. Rehabilitation activities were also mentioned in the *DEIS, page III-2*, and *APPENDIX C—HYDROLOGY ANALYSIS, pages 3 and 4*. The activities of the BAER Team were completed on all ownership within the Moose Fire, and, therefore, were included in the discussions. In addition, the water-yield analysis included past activity in the entire Coal Creek watershed, regardless of ownership.

3. See response to page 1, General Comments, third

woody debris, water temperature and pool habitat. The evaluation should also include a baseline assessment, how the baseline changed since the fire and potential impacts to the baseline post-fire.

2 Watershed impacts associated with fire suppression, rehabilitation and actions on private, federal and state lands were not addressed in the DEIS. The cumulative impacts of these actions and DNRC proposed and completed actions are critical to assessing which alternative maybe the most appropriate in this watershed. Include a discussion of all of these actions that have occurred post fire and the cumulative potential impacts of all of these actions to T&E species.

Specific Comments

Include more data on sediment erosion and sediment delivery to Coal Creek, Cyclone Creek and Dead Horse Creek. The Service suggests that this include natural or background sediment delivery pre-fire, sediment delivery from roads, sediment delivery increases because of the fire, sediment delivery associated with harvest technique, sediment delivery and erosion for each alternative. This may be
3 shown as % sediment delivery above natural pre-fire levels. We suggest modeling sediment delivery for a number of storms events such as 1 year event, 3 year event, 10 year event and 30 year event. Models that could be used for this include WATSED (USDA 1996) and Water Erosion Prediction Project (WEPP) (USDA 1997).

4 Page 3 Executive Summary. This executive summary should also include bull trout (T), Spalding's catchfly (T), water howellia (T) and slender moonwort (candidate species) under threatened and
5 endangered species. These species should also be addressed in the final EIS.

6 Page 6 Executive Summary. This executive summary should also include impacts to bull trout for each alternative. Such as no affect or may affect spawning, rearing or migratory habitat. Affects to threatened plant species should also be included here.

Page II-2. It is stated that several of the alternatives would not comply with grizzly bear guidance. We suggest that you follow the grizzly bear guidance in order to comply with the intent of the Endangered Species Act, 1973, as amended.

7 Page II-14. The summary of environmental effects states slight increases in sediment deliver beyond natural delivery or almost no increase in risk of sediment delivery. This could not be assessed because data was not provided in the DEIS. Provide additional information here as mentioned above.

8 Page II-15. It is stated that there may be a rise in sediment input to streams for a number of the alternatives. It also states that the impact will not be substantial. This could not be assesses from the DEIS because data was not provided. This statement is also misleading in that bull trout are very sensitive to fine sediment. This watershed has already been impacted with an increase in sediment delivery to streams due to the fire. There will be additional sediment input from salvage efforts even if best management practices (BMP's) and streamside management zones (SMZ's) are applied. BMP's and SMZ's greatly reduce sediment delivery to streams but do not eliminate sediment delivery completely. In order for SMZ's to work effectively, vegetation must be present. In the post fire condition there is little to no vegetation to allow SMZ's to function appropriately. With properly functioning SMZ's sediment delivery would be greatly reduced, in a post-fire condition a larger SMZ will be necessary to avoid sediment delivery to streams. We recommend that SMZ's be increased for both perennial and ephemeral streams and that no harvest occur within the SMZ's.

and fifth paragraphs.

4. We have added bull trout to the Final Executive Summary; an effects analysis was completed in the DEIS on bull trout.

5. Information on sensitive plants in the analysis area includes the results of a sensitive plant survey conducted by an independent contractor in 1997 on Coal Creek State Forest and a search of the current Montana Natural Heritage Program database. Water howellia (*Howellia aquatilis*) and slender moonwort (*Botrychium lineare*) are not known to occur in Flathead County. The closest known population of Spalding's catchfly (*Silene spaldingii*) to the project area in Flathead County is Wild Horse Island on Flathead Lake.

6. A complete list of the direct, indirect, and cumulative impacts can be found in *APPENDIX D—FISHERIES ANALYSIS* and *ADDITIONS AND ERRATA*.

7. The rationale for the risk levels shown in the DEIS, page II-14, were discussed in more detail in *DEIS, pages III-3 through 4 and III-33 through 34, APPENDIX C—HYDROLOGY ANALYSIS, pages 6 through 10,* and *APPENDIX I—SOILS ANALYSIS, pages 3 through 5.*

8. As described in *APPENDIX C—HYDROLOGY ANALYSIS, pages 6 through 7,* and *APPENDIX D—FISHERIES ANALYSIS, page 15,* SMZs would be extended beyond the requirements of the SMZ Law for all streams. No harvesting is proposed in the SMZ of fish-bearing streams. A complete list of the direct, indirect, and cumulative impacts can be found in *APPENDIX D—FISHERIES ANALYSIS* and *ADDITIONS AND ERRATA* of the *FEIS* .

9. INFISH is a strategy for Federal lands and does not include lands managed by the State of Montana. Instead, the *Restoration Plan for Bull*

9 Pages D7-D19. These pages address additional existing sediment concerns for Coal Creek and Cyclone Creek. The DEIS states that Coal Creek has had critical or threatened McNeil core values 16 out of the past 18 years. In addition, Coal Creek has had threatened substrate scores 5 of those years. Cyclone Creek also had threatened McNeil core values in 1999 and 2000 with no data for 2001. The substrate scores presented in Figure D-3 show that scores are all near 10. According to Weaver and Fraley (1991) substrate scores of 9 are critical and a score of 11 is acceptable, noting that higher scores are better for bull trout. Bull trout embryo survival in Coal Creek has also been linked to fine sediment (Weaver and White 1985). As fine sediment increased to 44% there was no survival of bull trout embryos. Fine sediment concerns are further supported by the 303(d) listing of Coal Creek. The listed cause of the impairment is siltation, with the probable sources listed as silviculture, logging road construction and maintenance, and highway/road runoff (DEIS).

The Service supports fine sediment standards described in the Matrix of Diagnostics/Pathways and Indicators (Matrix) issued in the biological opinion (BO) for the Effects to Bull Trout from Continued Implementation of Land and Resource Management Plans and Resource Management Plans as Amended by the Interim Strategy for Managing, Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, Western Montana, and Portions of Nevada (INFISH), and the Interim Strategy for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH) (USDI 1998). These standards indicate that bull trout streams are at unacceptable risk if fine sediment is >17% (<0.85mm). Both Coal Creek and Cyclone Creek exceed this and are functioning at unacceptable risk

The trend for these two bull trout streams has been a negative one in regards to sediment. With the already impacted baseline for these streams from past land management activities and the fire of 2001, any additional sediment delivery to the streams will be detrimental to the continued survival and recovery of bull trout. Bull trout survival and emergence have a significant inverse relationship to the amount of fine sediment found in streams (Weaver and White 1985; Weaver and Fraley 1991; Clancy 1993; USDA 1993).

10 Page III-2. It is stated that field inspections were conducted to evaluate sediment from roads. More information is needed on what was inspected, what was found, and what was "fixed" on the Coal Creek road so that an assessment can be made as to potential impacts to bull trout. Studies have shown that secondary road networks are a major source of sediment to perennial streams (MBTSG 1998). Additionally, Montana Bull Trout Restoration Team (2000) ranked forest practices (including construction and use of secondary forest roads) as the greatest risk to bull trout in Montana (MBTSG 1995). We suggest providing data on sediment delivery associated with roads.

11 Page III-7. Fisheries findings are reported here but effects to bull trout are not described. Effects are stated only as increases in sediment. This increase in sediment may impact bull trout spawning because they prefer low gradient streams with loose, clean gravels (Fraley and Shepard 1989). Fine sediments fill spaces between the gravel that are needed by incubating eggs and fry. Because bull trout eggs incubate for about 7 months in the gravel, they are especially vulnerable to fine sediment accumulation and water quality degradation (Fraley and Shepard 1989). Juveniles are similarly affected, as they also live on or within the streambed cobble (Oliver 1979; Pratt 1984). The Service suggests reporting potential impacts to bull trout.

Trout in the Clark Fork River Basin and Kootenai River Basin Montana and the Flathead Basin Forest Practices Water Quality and Fisheries Cooperative Program Final Report have provided methodology that has been implemented over an 18-year time period and provides the best available science and trend analysis for this document. The data collected by Montana Fish, Wildlife and Parks exhibits the percentage of fines less than 6.35mm, since this is the index used by MFWP and the Flathead Basin Commission.

DNRC believes that by implementing BMPs and extending SMZs as previously discussed, the potential for sediment delivery from harvesting activities is low. In addition, as stated in *APPENDIX D—FISHERIES ANALYSIS* under *EXISTING CONDITIONS, page D-4*, the highest density of redds occur on State and USFS land above the area affected by the Moose Fire.

10. A detailed road log was developed for the entire road system that is proposed for log hauling in the fall of 2001. The purpose of the road log was to evaluate surface-drainage, erosion-control, and ditch-relief needs, and to identify additional culvert replacements that were not funded through the BAER Team. All needs identified in the road log were completed in the fall of 2001, prior to Phase 1 or Phase 2 of the Moose Fire Salvage and Reforestation Project. As a result, the statements regarding BMP standards in the DEIS, page III-2, are accurate. The road log is available upon request, but was not included in the DEIS.

11. Thank you for your input. The FEIS will be updated.

12. The 50-year-design flood event listed in *APPENDIX B- STIPULATIONS AND SPECIFICATIONS, page B-1*, is based on a guideline developed in

12 Page B-1. It is stated that culverts will be sized for a 50-year flood event, page 3 of appendix I states that culverts will be designed for a 100-year flood event. Which is it? The Service would suggest the 100-year event as required by federal land management agencies under INFISH (USDI 1998).

13 Page 5, Appendix C. Table C-1 reports values for Lower Coal Creek, Coal Creek and Upper Coal Creek with no description of how these reaches are delineated. Coal Creek was also described in other sections of the DEIS in this manner. The Service would recommend a map and a description of these reaches so it can be determined where on Coal Creek the values for Table C-1 and other sections of the DEIS apply.

14 Page 6, Appendix C. This states that no timber salvage would occur within 100 feet of fish-bearing streams. The Service recommends that this distance be increased due to fire impacts mentioned above indicating that SMZ's of 100 feet will not function appropriately due to loss of most or all vegetation. In addition with the 7% increase in water yield due to the fire, additional distance will be necessary to decrease erosion and sediment delivery.

15 Page 6-10, Appendix C. All of these pages discuss sediment delivery. These impacts could not be assessed because data was not provided on sediment delivery.

16 Page 8, Appendix C. States that roads will be located well away from streams. What does this mean? How many feet? This statement is misleading because 3 roads are proposed to cross streams and two parallel streams at an unknown distance from the stream. Due to the crossings and possibly the location of these roads there will be impacts to streams.

17 Page D-10, Tables D-4 through D-6. Data shows woody debris in Coal Creek for 1997. DNRC has accepted this data as an indicator of good woody debris in Coal Creek. This data may not be accurate at this time due to woody debris that may have burned in the fire and other storm events that may have removed woody debris from the stream. In order to determine if woody debris is presently functioning appropriately for bull trout, surveys should be conducted. It was also noted that the larger diameter classes contributed little woody debris to the streams. This larger woody debris forms deep pools that are a key factor in suitable winter habitat for bull trout (Jakober 1995).

18 Page D-13. It is stated that Dead Horse Creek is not considered a bull trout stream by Department of Fish Wildlife and Parks. The Service does consider Dead Horse Creek a bull trout stream because there are incidental occurrences of juvenile bull trout and habitat is suitable for bull trout.

Summary Comments

Due to additional sediment delivery concerns to Coal Creek from Dead Horse Creek the Service recommends that unit 3DH be dropped from the proposal. The potential for additional sediment delivery associated with this unit and the Phase I salvage harvest that occurred in Dead Horse drainage could critically impact bull trout survival and recovery in the Coal Creek drainage. If additional data is provided on potential sediment delivery this could be reassessed. At this time there is not data to support a lack of sediment impacts to Dead Horse Creek and Coal Creek. The Service also recommends evaluating sediment delivery from units near Coal Creek and Cyclone Creek. If there is additional sediment delivery from proposed units we advise modifying SMZ's to minimize these additional impacts. The Service also recommends selection of an alternative that does not build additional roads and bridges due to potential increases in sediment delivery to bull trout streams. At this time the Service recommends alternative E due to impacts to T&E species associated with the other alternatives.

the SFLMP. The 50-year event is a minimum that would be used. These design stipulations and specifications are specific to new temporary roads proposed in Action Alternatives B and C. Each of the bridge crossings proposed in these action alternatives would pass greater than a 50-year event. New culverts needed on proposed new roads would be evaluated in the field prior to writing of the Timber Sale Contract and be designed as a minimum to pass a 50-year event. The statement regarding 100-year culvert designs in *APPENDIX I—SOILS ANALYSIS* refers to culvert replacements that were already completed in the fall of 2001, based on the road log previously mentioned.

13. Reference to Coal Creek means the entire Coal Creek watershed. The remaining 5 designations refer to the 5 subwatersheds that make up the Coal Creek watershed. A map delineating the Coal Creek watershed and its 5 subwatersheds is found on in the *DEIS, page III-5*. This map can be found in color in the Environmental Assessment completed for the Moose Fire Salvage and Reforestation Project—Phase I.

14. The 100-foot, no-cut buffer zone was designed to ensure that no potentially recruitable large woody material to the streams would be taken. The combination of a 125-foot equipment-restriction zone, skid trail planning and spacing, and erosion control on skid trails should be sufficient to contain sediment delivery from the proposed ground-based activity (*APPENDIX C—HYDROLOGY ANALYSIS, pages 6 through 7*).

15. See response to page 1, General Comments, third and fifth paragraphs.

16. Location of roads "well away from streams" means, at a minimum, that all requirements of

The Service suggests monitoring sediment delivery in both Dead Horse Creek and Coal Creek to assess any additional impacts to bull trout associated with land management actions. In the event of large increases in sediment delivery or chronic sediment delivery the Service recommends mitigating for the increase in sediment delivery. The Service also suggests evaluating mitigation measures such as seeding or mulching post salvage to decrease sediment erosion and delivery in sensitive areas.

The Service suggests a comprehensive evaluation of bull trout habitat. This would include baseline data pre and post-fire. Montana Fish Wildlife and Parks may be able to provide some of this information. The evaluation should include all of the elements that are in the Matrix (USDI 1998). This includes: subpopulation characteristics of size, growth and survival (life history diversity and isolation, persistence and genetic integrity); water quality (temperature, sediment, chemical contamination/nutrients); habitat access (physical barriers, substrate embeddedness, large woody debris, pool frequency and quality, large pools, off channel habitat, refugia); channel condition and dynamics (average wetted width, maximum depth, streambank condition, floodplain connectivity); hydrology (change in peak flows, base flows, increase in drainage network); watershed conditions (road density and location, disturbance history, riparian areas, disturbance regime). All of these factors are essential for the recovery of bull trout. Assessing the condition of these habitat characteristics will provide the data necessary to determine if bull trout in Coal Creek, Dead Horse Creek and Cyclone Creek will be impacted by land management actions. This data will also provide information that may be useful in restoration efforts.

The Service appreciates the opportunity to provide technical assistance for Phase II of the Moose Fire Salvage and Reforestation Project. Please contact us for assistance with grizzly bear guidance and other T&E species issues. We look forward to the continued cooperation between our agencies in the future. If you have questions or wish to consult with us about our comments, please contact Tim Bodurtha at (406) 768-6882 or Leslie Kubin at (406) 758-6881.

Sincerely,

R. Mark Wilson

R. Mark Wilson,
Montana Field Supervisor

Copy to: Kalispell suboffice

ARM 36.11.306 would be met. This administrative rule states that road construction, "…is prohibited in a streamside management zone except when necessary to cross a stream…" Specific to the proposed road construction in the DEIS, roads would not parallel a stream or an SMZ. Where stream crossings are proposed, the proposed road leaves the SMZ in as short a distance as possible while still allowing practical road grades and surface-drainage function.

17. The data on woody debris found in the tables was meant as an index of prefire woody debris. Any effects to in-stream woody debris as a result of the Moose Fire was of natural occurrence. Since no timber harvesting is proposed within a minimum of 100 feet of any fish-bearing stream, the action alternatives would allow for the continuance of natural recruitment of woody debris to the stream channel.

18. Thank you for your input. Whereas juvenile bull trout have been documented in Deadhorse Creek, no known spawning occurs here. However, the same level of mitigation is being applied to Deadhorse Creek as in Cyclone and Coal Creeks.

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Apr 25 '02

Comments: Moose Fire Salvage - Phase II

Long term mgt. on the Coal Cr. State Forest was impacted by this fire. Salvage of burned trees / dead+dying from fire & beetle attack alters management options available to Managers. Negative effects to wildlife and T+E species are already in place w/o any salvage of the timber.

To return the maximum benefits to the trust account (C.S.) Alt. B should be chosen. The amount of new roads should not significantly increase adverse effects to water quality considering all the safety features required. Although some old growth areas will be entered, the total reduction would be not be significant. I still do not agree at all with the current old growth definition and probably never will - political not justified! When the same % of large-dia trees remaining is nearly the same in all alternatives - choose the Alt B with the most economic return! Habitat changes have been dramatic due to the fire salvage logging will not really change this in any significant way!

Keep me posted - go for the max!

H. T. Vars - 1873 Lakeshore Dr Rolling Fk MT

Thank you for your input on this project. Your comments will be considered in the decision-making process.

Vars

Manning, Brian

From: Steve Thompson [sthompson@NPCA.ORG]
Sent: Tuesday, April 30, 2002 11:03 AM
To: bmanning@state.mt.us
Subject: Moose 2 comments

Hi Brian,

I had hoped to attend Monday's field trip but couldn't due to a backlog of work on other projects.

I have reviewed the draft EIS, and I would like to express my support for Alternative C. I believe this alternative will allow salvage operations to proceed in the quickest way with the least potential for controversy, legal quagmires and environmental impact.

I urge DNRC not to take the risky, and less-than-prudent action of pushing for logging in old growth. Unfortunately, DNRC made the strategic decision a couple years ago not to embrace the consensus recommendations of the independent scientific panel on the old growth issue, which could have resolved the legitimate concerns about implementation of the 1996 forest plan and provided more leeway to consider alternatives such as Alternatives B and D. Instead, DNRC Director Bud Clinch has engaged in tactics to gut the 1996 forest plan, including his covert support for Sen. Crismore's ill-begotten attempt to nullify biodiversity standards in that plan. With resolution potentially close at hand, Director Clinch has opted for confrontation. I sympathize with DNRC foresters on the ground, such as yourself, who are trying to do the right thing, but end up getting tangled in legal and political machinations. I firmly believe it doesn't have to be this way. But until better leadership direction emerges, the situation probably will persist. At present, the legal status of the two old growth alternatives is ambiguous at best.

I prefer Alternative C over Alternative E due to the cost, difficulty and potential environmental impacts associated with new road construction. Alternative E does not indicate any clear advantage.

Thank you for the opportunity to comment.

Steve Thompson
Box 4471
Whitefish, MT 59937

Thank you for providing input on this project. Your comments will be considered in the decision-making process.

Steve Thompson

Montana Old Growth Project

Jane Adams * 229 Edgewood Drive * Kalispell. MT 59901
257-4527 * jadams@digisys.net

Brian Manning
Stillwater State Forest
P.O. Box 164
Olney, MT 59927

Dear Brian, April 26, 2002

Please consider these comments on the Moose Fire Salvage Phase II DEIS.

1 Harvesting in areas currently meeting Old Growth definition, alternatives B and D

DNRC is enjoined from the harvest of any old growth until a rule is in place for old growth management on state lands. The current SFLMP is based solidly on maintaining biodiversity. To comply with Biodiversity RMS 6 of the SFLMP the state must manage for at least 50% of the historic amount of old growth. Until the state has undergone the full rulemaking procedure. they must comply with the SFLMP. If a proposed rule does not comply the SFLMP, the SFLMP must be amended following the appropriate process. It is highly doubtful that such a complex rulemaking procedure will be completed before an alternative for the Moose fire salvage must be chosen. I strongly urge you to drop from further consideration alternatives B and D. I believe it is a waste of taxpayer dollars to even consider harvesting in old growth at the current time.

If the state does decides to pursue harvest in old growth without going through the full rulemaking procedure, please give a full explanation in the FEIS of how they plan to do this from a legal perspective. Please also include tables in the FEIS that would give a more complete picture of the old growth situation on state lands in the Northwestern Land office. I've already requested such tables in my letter of January 2, 2002 but my request was ignored. Your assessment in the DEIS was limited to the Coal Creek state forest (CCSF), which as you know has far more old growth than most DNRC units. The technical review committee clearly stated that old growth must be managed as a shared responsibility among all the MT DNRC units to meet its old growth commitment. Given the huge reduction from historic conditions in old growth amounts on most DNRC units, the old growth on the CCSF is far more important than is apparent from an assessment of just the CCSF.

The primary rationale given for harvesting in unit 1se is to prevent the spread of bark beetles to adjacent old growth. While I agree that the bark beetle threat is real, harvesting the burned trees is not the only way to control the bark beetles. The Talley Lake ranger district has successfully used a variety of methods to control bark beetles, including trap trees, aggregating pheromone traps, and disaggregating pheromone capsules. You can contact Ed Leiser, the Talley Lake silviculturist for more information. Please include a full and objective analysis of these
2 alternate methods of controlling bark beetles in your FEIS.

Helicopter logging versus building roads

Alternatives C and E both stay out of areas that currently meet the old growth definition. and are therefore both selectable. Alternative C would build 3.4 miles of temporary road, while alternative E would harvest via helicopter. My preference is that you select alternative C with an important modification (see below).

I am against alternative E because helicopter logging would necessarily harvest primarily large trees and snags in order to be an economically viable project. The Columbia River Basin

1. DNRC's understanding is that the Department is enjoined from harvesting in old-growth stands on timber sales that were named in Judge Sherlock's ruling. The Department is also enjoined from using the 1998 Biodiversity Guidance for developing new timber sale projects. *APPENDIX E—VEGETATION ANALYSIS, page E-18*, examines 3 independent estimates of the amount of old growth that historically occupied the North Fork of the Flathead Valley and Coal Creek State Forest. The analysis was designed to comply with the intent of the SFLMP and determine if 50 percent of the historic amounts of old growth would be retained. A conservative analysis was done; stands that were proposed for entry with limited harvesting would still retain the minimum criteria for the old-growth definition postharvest. In this analysis, these stands were not considered to be part of the overall old growth remaining on Coal Creek State Forest after implementation of Action Alternatives B or D (*APPENDIX E—VEGETATION ANALYSIS, page E-17*). The project is designed, primarily, as a management response for areas burned in the Moose Fire and, to be effective, would need to be implemented in the near future. For these reasons and because of available data, we felt that using Coal Creek State Forest as the analysis area for the old-growth resource was appropriate. Old-growth management over all State-classified forest lands, or even over the entire area administered by the Northwestern Land Office, is beyond the scope of this project.

2. This project proposes to use various methods (*DEIS, pages II-2 and II-4*) to reduce the mortality of trees attacked by bark beetles, including salvage harvesting, antiaggregate pheromone (MCH) deployment, trap-tree harvests, and, if recommended by entomologists familiar with the project, funnel traps. DNRC's Pest Management Specialist, as well as a USFS

study determined that numbers of large trees are below the historic range of variability for ALL seral stages due to widespread logging. This has serious consequences for biodiversity and forest health. Many species of birds and mammals require large diameter trees and snags to meet essential life history requirements. Cavity nesting birds, woodpeckers primarily, contribute substantially towards the control of insect pests. Older, larger trees and snags with heartrot are generally strongly preferred for both nesting and roosting. The continued reduction of large old trees across the landscape should be avoided whenever possible. Helicopter logging operations also tend to fall large numbers of unmerchantable snags as a safety precaution. Selecting
3 alternative C would allow DNRC to harvest fewer large trees and cut fewer snags, and still make money for the schools. I urge you to build the lowest grade roads possible, and to reclaim them as fully as possible.

Harvest of areas that were old growth prior to the Moose fire

There are several areas that were old growth prior to the Moose fire, but no longer meet the minimum large tree requirements of the Green et al (1992) definitions. In my letter of March 4 I urged you to provide data on such stands in your EIS. The letter may not have reached you in time for you to include data in the DEIS, but please include such data in the FEIS along with an analysis of this issue. I have compared a map of old growth prior to the Moose fire with maps of the Moose action alternatives, and it looks like at least 3 post-old growth areas are included in all action alternatives. These areas are in Sections 27, 23, and 25. I do not know the acreage or condition of these areas, since this issue was not addressed or analyzed in the DEIS.

Burned old growth areas are particularly valuable for wildlife because of the presence of large diameter snags with heartrot. Most cavity nesting species can only excavate in trees whose heartwood has been softened with heartrot. Heartrot can only infect trees while they are still living, and older trees generally show a much higher incidence of heartrot than younger trees. Burned, post-old growth stands likely have many trees that had heartrot at the time of death and may be of extremely high ecological importance. They are also quite rare on the landscape due to aggressive post-fire salvage logging and the outdated perception that burned trees are of little ecological importance. Cavity nesting bird species eat tremendous numbers of insect pests and it is in the best long-term interest of the state to maintain abundant habitat for such species.

Unfortunately our field trip to view burned post-old growth stands was cancelled due to weather and road conditions. I would still like to view these areas when conditions are favorable.

Snag and live tree retention

Please make every effort to ensure that trees that are of value to wildlife remain standing. Maintain trees and snags in clumps, examine trees to be cut carefully for any signs of wildlife use or evidence of heartrot, and spare these snags and trees from harvest. I've heard the Talley Lake district has a document on determining whether burned trees are live or dead. Please obtain and use such information rather than simply guessing. I am not concerned so much with the absolute numbers of snags, but that the snags that remain are of value to wildlife. Please do your utmost best to ensure maintaining habitat for wildlife that require snags and trees with heartrot. You should have plenty of information on the specific qualities of valuable wildlife trees. Please do your best to implement this information.

Comments on the Wildlife analysis

As a former DNRC wildlife biologist of 5 years with an expertise in birds, I feel compelled to mention that I believe sections of the wildlife analysis are biased towards finding no impact and are not entirely credible.

The analysis states that Black-backed woodpecker habitat would be reduced on 247 acres,

entomologist, has been on site to provide recommendations. The use of MCH has already begun, to a limited degree, to protect large-diameter Douglas-fir trees that are in areas of high risk.

3. Our experience with helicopter logging does not support the theory that many more hazard trees will be felled as a safety precaution than with ground-based logging on comparable steep slopes. In either case, for safety reasons, some hazard trees will be felled; the range of burn intensities will cause the amount to vary greatly.

4. A direct effect is caused by the action and occurs at the same time. Direct effects include individual mortality or displacement caused by the action. Conversely, an indirect effect is caused by the action and occurs later in time. These effects include habitat alteration, road effects following the project, etc. Therefore, the loss of habitat would be considered an indirect effect. The conclusion of no substantial direct effects is based on the fact that harvesting would occur outside the nesting season when birds are able to move away from the harvest disturbance. With the abundance of habitat available on Coal Creek State Forest and adjacent lands, displacement to adjacent habitats is not expected to result in substantial negative effects (*APPENDIX F-VEGETATION ANALYSIS, page F-30*).

5. DNRC acknowledges the importance of retaining burned habitat for biodiversity. To analyze these habitats at the fine-filter scale, DNRC listed the black-backed woodpecker as a sensitive species. In Moose Fire Salvage and Reforestation Project - Phase I and Phase II, DNRC is retaining 677 to 692 acres of the 1,375 acres of potential habitat (*APPENDIX E—VEGETATION ANALYSIS, page F-*

and that 677 acres would remain, in alternatives B and D. This is a loss of over 26% of the
4 available Black-backed woodpecker habitat on the CCSF. How is this an "indirect" effect, and how was the conclusion reached that there are no substantial direct impacts? This analysis "acknowledges" the existence of a substantial amount of adjacent burned forest. Please also
5 acknowledge the fact that black-backed woodpecker habitat has decreased greatly from historic times, and that aggressive salvage operations occur in most burned forests, and consider this when concluding that a loss of habitat is inconsequential.

Thank you for accepting these comments Brian. Please excuse the blunt and sometime accusatory tone of this letter. It is no way personal, merely a reflection of writing with time constraints. I do appreciate your efforts to help me understand what is being proposed in this project, and your efforts to help me see firsthand what is being proposed (although weather has prevented it). I look forward to going into the field with you this summer to view the marking and unit layout.

Sincerely,

Jane Adams
Montana Old Growth Project

Manning, Brian

From: Jane Adams [jadams@digisys.net]
Sent: Tuesday, April 30, 2002 9:44 AM
To: bmanning@state.mt.us
Subject: moose comments

Hi Brian,
I sent in my comments to you yesterday via both email and snail mail. I'd like to modify them based on something someone brought to my attention. In my comments I said that I was in favor of alternative C, which would harvest with ground based machinery and build roads. I was against E because I was under the mistaken impression that it would harvest larger trees because harvest would be with a helicopter . I've just been so busy lately that I didn't have time to read the DEIS as carefully as I should have, and didn't see that the prescriptions for C and E were essentially the same for the units they both contain. I just spoke with both Dan and Mike Clark and they confirmed that the marking would be the same whether it was helicopter or ground-based. So given that, I would like to support alternative E, rather than C. Please attach this note to my other comment letter. Thanks very much,

Jane Adams
Montana Old Growth Project
229 Edgewood Drive
Kalispell, MT 59901
406-257-4527
jadams@digisys.net

32). Additionally, outside of Coal Creek State Forest, large amounts of habitat are available and not proposed for harvesting on Flathead National Forest and Glacier National Park lands. DNRC considered these factors when conducting the analysis.

FRIENDS OF THE WILD SWAN
P.O. BOX 5103
SWAN LAKE, MT 59911

April 29, 2002

Dept. of Natural Resources and Conservation
Stillwater State Forest
P.O. Box 164
Olney, MT 59927

Dear Mr. Sandman:

Please accept the following comments on the Moose Fire Salvage and Reforestation Project, Phase II Draft Environmental Impact Statement on behalf of Friends of the Wild
1 Swan, Swan View Coalition and Alliance for the Wild Rockies. To begin, we do not believe that our scoping comments were addressed in the DEIS, please explain why
2 DNRC our comments on water quality and connectivity for wildlife were not included in your analysis.

HELICOPTER LOGGING

3 The DEIS includes helicopter logging, to varying degrees, in all alternatives yet there is no analysis of the impacts of heli logging. For example, the DEIS does not disclose the location and size of the helicopter landings. These can be very large clearcuts, yet the
4 public is not informed of where they are, how large they are and what the impacts to wildlife and water quality are. In order to *sweeten the pot* helicopter logging may also involve logging larger trees as well as felling adjacent "hazard" trees that are important wildlife habitat. These impacts were not differentiated between alternatives.

FISHERIES/WATER QUALITY

Assumptions are made in the DEIS regarding impacts to fisheries, however, there is no monitoring to validate the assumptions. DNRC cites the Montana Bull Trout Scientific Group that past forestry practices were damaging to watersheds and bull trout. However, DNRC has ignored the recommended strategy contained in *the Relationship Between Land Management Activities and Habitat for Bull Trout* that was an important component to the Montana Bull Trout Restoration Team's development of a Bull Trout Restoration Plan. This strategy was adopted so as not to impose "one size fits all" rules but rather to apply an adaptive management approach which would include monitoring habitat components, criteria based standards and delineation of caution zones. The Moose Phase II project does not delineate caution zones on the streams in the Coal, Cyclone or Dead Horse Creek watersheds and does not monitor the components contained in Table 3 of the Land Management Plan (other than fine sediment and redd counts which is routinely done by Fish, Wildlife and Parks).

1. Comments received on water quality were specific to the 303(d) listing of Coal Creek and its TMDL status. These concerns were addressed in *APPENDIX C–HYDROLOGY ANALYSIS, page 3.* Water-quality concerns and analysis were analyzed in *APPENDIX C–HYDROLOGY ANALYSIS, pages III-1 through III-5.* Comments on soil productivity were analyzed in the *DEIS, pages III-32 through 34* and *APPENDIX I–SOILS ANALYSIS.*

2. In *The Relationship Between Land Management Activities and Habitat for Bull Trout (MBTSG, 1998),* the MBTSG states, "Our recommendations are in the form of a framework rather than a detailed strategy, and do not imply a set process, regulatory mechanisms, or authorities." The guidelines laid out in the MBTSG paper have already defined the "caution zones", which vary according to the parameter monitored. There is no provision, requirement, or suggestion that "caution zones" be located or delineated on the ground or administratively. Monitoring that would take place includes sale administration, BMP implementation and effectiveness, substrate scores, McNeil coring, and redd counts.

   This level of monitoring should be sufficient to track effectiveness and, if necessary, identify problems to assist in solution determination.

3. Potential log landings for helicopter yarding operations were identified by the ID Team and used by specialists to analyze potential effects; however, actual locations of landings would be agreed upon with a purchaser and would meet specific specifications, such as being located adjacent to an existing road in an area that is well drained; using existing openings from previous harvesting activities as much as possible; using landings from previous harvests when possible; and requiring a spill plan for fuel containment that meets HAZ/MAT

Activities that occur within the "caution zone" (i.e., 100 year floodplain plus 150 feet on either side and/or the hydrologic boundary of the watershed) may inherently pose some risk and should not occur unless sufficient information is available to reliably demonstrate that the activity will not adversely affect habitat characteristics necessary to support bull trout. The proposed SMZ of 100 foot no harvest zone and 25 foot equipment exclusion zone is not monitored to see if it is adequate to protect water quality and beneficial uses and it is unclear whether activities will take place in the "caution zone."

5 We are also puzzled as to why DNRC believes that 50 year culverts are adequate. There
6 is no monitoring planned to assess them for adequacy. We are also puzzled as to why Swift Creek is being monitored (pg. B2) and exactly what is being monitored there.

7 Since water quality and fisheries are such a huge concern in the Coal Creek drainage with Coal Creek being on the state's 303(d) list as impaired for beneficial uses why isn't DNRC including TMDL development as part of this project. The state of Montana made a commitment to recover bull trout and yet all we see are more impacts and no plan to improve water quality.

OLD GROWTH FORESTS AND WILDLIFE

Old-Growth Forest: DNRC does not appear to be complying with the State Forest Land Management Plan (SFLMP) for biodiversity or the scientists recommendations
8 that were adopted by the Land Board a year ago. Where is the old growth located on the Coal Creek State Forest? Is it connected? Where is the old growth network? Until DNRC amends the SFLMP it is required to comply with it, including RMS 6 to manage 50% of the old growth that occurred historically. Without the old growth network information it is impossible for the public or Land Board to make a reasoned decision
9 about whether stands that were old growth prior to the fire should be logged or whether those stands contain attributes and are located where they provide habitat for old growth dependent species or connectivity between other old growth stands. Before reducing a stand's ability to become old growth there must be a network that provides for the needs of old-growth dependent species, including fore-going logging in burned old growth habitat if necessary.

Alternatives B and D are not selectable until DNRC undergoes rulemaking on its old-growth/biodiversity guidance. There is currently an injunction against old growth logging until the DNRC completes rulemaking on its old growth guidance. Furthermore, in the SFLMP Remington advised that sanitation and salvage cutting were inappropriate in old growth because these activities remove snags and decadent trees which are key old growth components.

10 Lynx: There is no map of current lynx denning and foraging habitat and connectivity
11 between habitat blocks. The DEIS references the Lynx Conservation Assessment and
12 Strategy (LCAS) and yet this very basic part of the LCAS is missing. Where are the Lynx Analysis Units (LAUs)? How much of the LAU is in an unsuitable condition for
13 lynx? Where is the denning and foraging habitat and connecting corridors to facilitate lynx movement? Where are these habitat requirements in relation to past and proposed
14 cutting units.

specifications at service landings. The prescribed salvage harvest is similar regardless of yarding method. A map with potential helicopter landings is located in the project file.

4. The proposed landings would be located along open roads or in existing clearcuts; therefore, no additional effects of the landings are expected.

5. The 50-year-design flood event listed on page B-1 is based on direction contained in the SFLMP. The 50-year event is a minimum that would be used. These design stipulations and specifications are specific to new temporary roads proposed in Action Alternatives B and C. Each of the bridge crossings proposed in these action alternatives would pass greater than a 50-year event. New culverts needed on proposed new roads would be evaluated in the field prior to writing the Timber Sale Contract and designed as a minimum to pass a 50-year event.

6. Monitoring in Swift Creek was recommended by the *Flathead Forest Practices, Water Quality and Fisheries Cooperative Program Final report, June 1991*. Yearly monitoring of water yield and turbidity takes place in the Swift Creek basin. Surveys of stream conditions in regard to channel stability, sediment sources, and native fish occurrence and habitat conditions have taken place in the Swift Creek drainage in recent years. None of this is particular to the salvage proposal for the Moose Fire analysis area; therefore, the reference to the monitoring will be removed from *APPENDIX B—STIPULATIONS AND SPECIFICATIONS* in the FEIS to avoid confusion.

7. TMDL development for Coal Creek is currently underway as a separate project. DNRC is in the process of completing a TMDL in a joint venture

We are further confused by the DEIS stating on page F-11 that prior to the Moose fire the Cyclone Coal Grizzly Bear Subunit on the Coal Creek State Forest contained 25% denning habitat, 22% mature forage habitat and 6% young forage habitat. Then in the alternative analysis of cumulative effects on page F-14 the DEIS states that existing denning habitat on the State Cyclone-Coal Grizzly Bear Subunits would be reduced
15 from 25.3% to 23.8%. Does DNRC consider the burned habitat as still retaining the attributes to remain as lynx denning habitat? Why then is burned old growth not still considered old growth?

Grizzly Bear: The DEIS at II-2 states that "several of the alternatives developed would not comply, in part, with the old-growth moratorium and/or grizzly bear guidance." Indeed, the DEIS at II-25 acknowledges Alternative B poses "a high degree of cumulative risk to grizzly bears," with risk decreasing respectively from Alternative C-E on subsequent pages.

However, we find that none of the alternatives provide adequate reductions in open road density or adequate increases in grizzly bear security core areas. The current restrictions on acceptable levels of incidental take for the Flathead National Forest area surrounding the DNRC Phase II project area are as follows, based upon a "moving windows" GIS analysis:

1. No more than 19% of a grizzly bear management subunit may have open road densities in excess of 1 mile/square mile.

2. No more than 19% of a grizzly bear management subunit may have total road densities in excess of 2 miles/square mile.

3. No less than 68% a grizzly bear management subunit must have a total road density of 0 miles/square mile (be greater than 0.3 miles from any road or high-use motorized trail).

These non-discretionary terms and conditions are set forth in the February 17, 1995 biological opinion by Fish and Wildlife Service on Flathead Forest Plan Amendment 19. DEIS Appendix F, at F-26 cites this biological opinion as authority on the effects of
16 roads on grizzly bears, yet fails to compare the alternatives and existing situation to the standards it requires. DNRC has no grizzly bear habitat conservation plan for the Coal Creek State Forest, nor any similar document providing it with incidental take standards other than those required on surrounding federal lands. It only follows that DNRC must also meet those non-discretionary standards in order to similarly and adequately minimize its incidental take of grizzly bear due to its road access management program. It is arbitrary and capricious for DNRC to assume that simply not increasing road densities beyond those existing in 1996 will provide adequate security for grizzly bear.

Table F-3 on page F-25 indicates a an existing situation on DNRC lands that allows open and total road densities in excess of those allowed by the 1995 non-discretionary terms and conditions, as well as security core areas inadequate to meet those terms and conditions (38%, 25%, and 43%; compared to 19%, 19%, and 68%, respectively). The existing situation on DNRC lands is worse than for the subunit as a whole, yet DNRC proposes nothing to correct the problem. Moreover, Table F-3 shows that any of the

with the USDA Forest Service. Until the TMDL is developed, DNRC will follow the conditions listed in *APPENDIX C—HYDROLOGY ANALYSIS, pages 2 through 3*.

8. Refer to the discussion on old growth in *APPENDIX E—VEGETATION ANALYSIS*. The discussion includes maps, tables, cover-amount distribution, and estimated historic proportions, etc. In regard to compliance with the SFLMP, review DNRC's response to Montana Old Growth Project in this section.

9. Connectivity pertaining to wildlife habitat was addressed in the coarse-filter wildlife analysis (*APPENDIX F—WILDLIFE ANALYSIS, page F-4*) and in the fine-filter analyses for lynx (*pages F-11 and F-13*) and fisher (*page F-36*). The proposed salvage harvest would minimally alter canopy cover and would not result in measurable additional disruption of forest connectivity or increased habitat fragmentation beyond existing levels that resulted from the effects of the burn.

10. A map of the results of the lynx habitat model is located in the project file for Moose Fire Salvage and Reforestation Project—Phase I and Phase II.

11. Lynx Analysis Units (LAUs) and standards that apply to them were developed for Federal lands to promote the recovery of lynx. To assess effects to lynx, the State Coal Cyclone Grizzly Bear Subunit of comparable size to a LAU was used (*APPENDIX F—WILDLIFE ANALYSIS, page F-11*). In this area, DNRC lands were considered in detail.

12. The percentage of temporarily unsuitable lynx habitat on DNRC lands in the State Coal Cyclone Grizzly Bear Subunit is 34.7 percent (988 acres

proposed new road construction only makes the situation worse. The bottom line is that none of the DEIS alternatives provide adequate grizzly bear security from motorized access, something DNRC must provide regardless of whether it conducts Phase II salvage logging.

The implications of excessive motorized access have increased in the Moose Fire area due to a significant decrease in hiding cover. As hiding cover decreases, the need for wildlife security from disturbance and poaching increases. For fire recovery areas like Moose, access management standards may in fact need to be more restrictive than those listed in the 1995 non-discretionary terms and conditions until hiding cover has been reestablished.

We commend Appendix F for correctly noting the Moose Fire area will continue to provide important foods and habitats for grizzly bear and that this fact has been documented with research. We also commend Appendix F for correctly noting that at least one of the roads proposed in Alternative B "bisects approximately 4,000 acres of security core area," with neither remaining piece being large enough to satisfy the minimum 2,500 acre requirement. Moreover, the Appendix F analysis is to be commended for detailing the very real threat that these road corridors, even after the roads are partially obliterated, will become new travel corridors for snowmobiles – and right into suspected denning habitat. We find measures to adequately protect the suspected grizzly bear denning on Winona Ridge lacking in the DEIS.

Big Game: The DEIS discloses that off-road vehicle access to ATVs currently is higher due to lack of vegetation from the fire and that if road obliteration is not successful in preventing motorized use or unauthorized trails are maintained big game will become increasingly vulnerable. However, we could not find any measures in the DEIS that addresses this threat in terms of increased education or enforcement. In other words,
17 DNRC may build new roads, acknowledges that the current situation is already decreasing wildlife security by ATV/snowmobile use; yet is not proposing any measures to deal with the situation.

ECONOMICS

18 Most of the economics analysis in the DEIS is irrelevant to DNRC's administering trust lands to produce the largest measure of reasonable and legitimate return over the long run for beneficiary institutions. We found that several parts of the DEIS regarding how
19 much money this timber sale will make is unclear. First, we find it disingenuous for DNRC to portray this timber sale as directly providing education to schoolchildren. Timber sale receipts are deposited into the general fund and allocated by the legislature. Education continues whether this timber sale takes place or not.

20 Second, Table G-2 is not explained in the text. What are expenditures and development costs? Are they the costs to develop and administer the timber sale? If so, why do they differ by alternative? Or are they costs for road construction, maintenance, decommissioning, mitigation measures, etc.? If expeditures and development costs are not the costs for developing and administering the sale then where are they factored in?
21 We were further confused because Table G-2 Alt. B's numbers do not add up. Third, how were Table G-3's estimated trust revenue and school revenue numbers arrived at?

from past harvests/fires and 3,737 acres from the Moose Fire). Since all the proposed timber harvesting would remove dead or dying trees, it is not expected to increase the amount of unsuitable habitat (*APPENDIX F—WILDLIFE ANALYSIS, page F-12*). Therefore, under all alternatives, unsuitable lynx habitat is expected to remain at 34.7 percent.

13. Habitat parameters considered in the analysis were displayed on the lynx habitat map in the FEIS.

14. The lynx map in the project file provided a basis for the analysis. The recent harvest units were not accounted for on the map, but were subtracted out in the acreage figures reported on in *APPENDIX F—WILDLIFE ANALYSIS, pages F-10 through F-16*.

15. In the mixed-severity burn areas, denning habitat is expected to remain and, potentially, increase in time due to the increased coarse woody debris accumulations. All denning habitat identified prefire burned at mixed-severity intensities and are still believed to be functional. Areas that burned at a stand-replacement intensity were presumed to provide low potential for denning, as live forest cover important for security is currently absent.

16. This Biological Opinion analyzes the effects to grizzly bears due to the proposed (now implemented) *Amendment 19* to the *Flathead Forest Plan*. This Biological Opinion deals with 2 situations. The first situation is where USFS manages over 75 percent of the subunit. In these areas, the 19 percent, 19 percent, 68 percent thresholds are to be applied. The second situation is where USFS manages less than 75 percent of the subunit. In these areas, no net increase in the area over open- or total-

As we said in our scoping comments in order to fully evaluate economic effects DNRC must also look at whether there are increased costs to bull trout and watershed restoration as a result of logging at this time. Also, how logging, road building, and wanton illegal ORV use on sensitive, burned soils affects productivity and regeneration is a factor that needs to be fully analyzed to determine long-term affects to the school trust.

We hope that DNRC will full consider our comments and not just dismiss them to get the FEIS completed by May 10th. We also expect that since we have shown extensive interest in this project by submitting scoping comments, attending the field tour and sending DEIS comments that we will be sent the FEIS and decision.

Sincerely,

Arlene Montgomery

Arlene Montgomery
Friends of the Wild Swan
for
Keith Hammer, Swan View Coalition
and
Ryan Shaffer, Alliance for the Wild Rockies

road densities and no net decrease in security core are required by the amendment. The State Coal Cyclone Subunit is less than 75 percent USFS-managed land; therefore, the no net increase of open- or total-road densities and no net decrease in security core would apply on USFS lands (surrounding Coal Creek State Forest) to be in compliance with the Biological Opinion. Therefore, DNRC management on Coal Creek State Forest meets the USFS standards on adjacent Flathead National Forest.

In the Biological Opinion for Forest Plan Amendment 19 of the Flathead National Forest, the USFWS infers take as "adverse habitat modification or loss by high road densities" (*USFWS 1995*). In the wildlife analysis, this statement was used to support the contention of decreased habitat due to road impacts under Action Alternatives B, C, and D that would result in adverse effects to grizzly bears.

17. The DEIS acknowledges this as a concern and that it is an important consideration for the decisionmaker (*APPENDIX F–WILDLIFE ANALYSIS, page F-42*). Road management is expected to be exacerbated by large areas that burned at high intensity where illegal access could occur more readily (*APPENDIX F–WILDLIFE ANALYSIS, page F-42*). Continued periodic monitoring of closures and illegal use will continue; this monitoring will be used, as necessary, to develop additional protection measures. Under each proposed action alternative, mitigation measures would be implemented to reduce any additional risk of illegal ORV/snowmobile use on new roads (*DEIS GLOSSARY, page 7*).

18. You are correct in your assertion that the DEIS does not concern itself with "DNRC's administering trust lands to produce the largest

measure of reasonable and legitimate return over the long run for beneficiary institutions." The purpose of the DEIS is to identify the impacts associated with the proposed Moose Fire Salvage and Reforestation Project. The analysis does associate the impacts with the SFLMP, where the analysis of DNRC's timber-harvest program to administer trust lands is identified. It would be inappropriate to redo this program-level analysis for every sale undertaken on State trust lands.

19. We do not think it is disingenuous to associate the funds with the education of school children. If the funds were not made available for funding the education of public schools, the loss would have to be compensated through additional taxes from other sources or by reducing the funding to education by a corresponding amount. The fact that it must go through an appropriation process does not change these facts. If the legislature chooses to identify and spend these funds elsewhere, your comment would be germane. No attempt has been made to do this, and the linkage between the funds generated from sales and school education is appropriate. No assertion was made that education would stop if the sales did not take place.

20. Development costs are costs for road construction, maintenance, mitigation measures, etc. Expenses for developing and administering the sale are reflected in the difference between the stumpage revenue in *TABLE G-2 - ESTIMATED REVENUES AND EXPENDITURES FROM THE MOOSE FIRE SALVAGE AND REFORESTATION PROJECT - PHASE II FOR THE ACTION ALTERNATIVES* and estimated trust revenue in *TABLE G-3 - NUMBER OF STUDENTS SUPPORTED BY 1 YEAR'S ESTIMATED REVENUE*. For *TABLE G-2*:

- Stumpage Revenue is calculated by multiplying

the harvest volume times the stumpage price.

- State income is the sum of Stumpage revenue and Forest improvement fees.

- Expenditures are the sum of Forest improvement fees and Development costs.

21. The difference between Estimated trust revenue and Estimated school revenue is based on the proportion of lands that are school trust lands and public building lands. Only the portion associated with school trust land is used to estimate the number of students supported. The remaining monies are put into the general fund for use on public buildings. This sale contained an unusually high proportion of public building lands.

April 29, 2001

Clarence R. Anderberg
3461 Middle Rd.
Columbia Falls, MT 59912

Northwest Land Office
St. Ignatius, Unit

I feel that the harvest of trees should maximize the utilization of dead & dying merchantable timber. Alternative B is the best choice to accomplish the harvest. A portion of timber should be removed from the riparian area of Coal Creek. To do nothing in these areas will leave a mess in the near future from fallen trees in and across Coal Creek which will divert stream channels more downcut. Helicopter can easily remove trees within the streamside zones, and near areas existing roads.

Dead old growth is no growth and does not pump any water out of the ground which increases surface runoff & underground water flows. It is important to remove merchantable trees from these areas to reduce potential bug epidemic and reduce the fuels per acre of fallen trees that will end up on the forest floor.

It is very important to manage the forest as opposed to letting Nature manage our natural resources. There is no return to the tax payers when fighting forest fires on unmanaged forests. Money does not grow on trees but comes from Trees.

Thank you for providing input on this project. Your comments will be considered in the decision-making process.

Anderberg

Comments and Responses

MEIC
MONTANA ENVIRONMENTAL INFORMATION CENTER

April 26, 2002

Brian Manning, Forest Management Specialist
Stillwater State Forest
Department of Natural Resource and Conservation
PO Box 164
Olney, MT 59927

Dear Mr. Manning,

After reviewing the Draft Environmental Impact Statement (DEIS) for Phase II of the Moose Fire Salvage and Reforestation Project, there are several comments I would like put into the official record:

1 Action Alternatives B and D of the DEIS for Phase II Moose Fire and Salvage Reforestation Project, which includes the harvesting of old-growth , if implemented, would be illegal. The State district last year ordered the Department of Natural Resource and Conservation (DNRC) to stop the logging of old-growth forests on State lands until it goes through a public rule-making process under the Montana Administrative Procedures Act (MAPA). DNRC must comply with Resource Management Standard (RMS) 6 of the State Forest Land Management Plan.

2 Action Alternative C is worth supporting with a few changes. The proposal includes the building of 3.4 miles of new roads, the installation of 3 temporary bridges, and to fix 1.25 miles of roads. The proposal goes on to say that "when logging is complete, the bridges would be removed and the new roads would be made unusable to motor vehicles." I think DNRC should obliterate the roads when they are done harvesting the timber. Closing roads does little to deter ATV's, poachers or others who want to get in there and the roads pose a risk to grizzly bears in the area. I would also like to see helicopters not be involved in this action alternative. In order to pay for the cost of helicopter logging, harvesters take the biggest and best trees and leave very little on the ground. I would rather see DNRC use roads that meet Best Management Practices (BMP's) and obliterating them when done than helicopter use.

Sincerely,

Brad Borst
Issue Specialist/Organizer
Montana Environmental Information Center
PO Box 1184
Helena, MT 59624

Main Office: P.O. Box 1184, Helena, MT 59624, Telephone (406) 443-2520, Fax (406) 443-2507
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1. DNRC's understanding is that the Department is enjoined from harvesting in old-growth stands on the timber sales named in Judge Sherlock's ruling. The Department is also enjoined from using the 1998 Biodiversity Guidance to develop new timber sale projects.

2. The prescribed salvage harvest is similar regardless of the yarding method used.

Manning, Brian

From: Brad Borst [bborst@meic.org]
Sent: Tuesday, April 30, 2002 11:41 AM
To: bmanning@state.mt.us
Subject: Phase II Comments..

Dear Mr. Manning,
I sent in comments regarding Phase II of the Moose Fire Salvage and Reforestation Project via regular mail. In that response, I wrote in favor of Action Alternative C.
Upon further research, I feel that the long term detrimental effects of more roads in the area would be more harmful than the short-term disruptive nature of helicopter logging.
I would like to amend my comments in support of Action Alternative E, not Action Alternative C.
Please include this amendment into the official record.
Sincerely,
Brad
--
****

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April 29, 2002

Brian Manning
Forest Management Specialist
Stillwater State Forest
DNRC
P.O. Box 164
Olney, MT 59927

Dear Brian:

Please consider the following comments regarding Phase II of the Moose Fire Salvage and Reforestation Project.

1. All those individuals involved in this project are to be complimented on the *"job well done"*.

2. The analysis of the "no action" alternative does present information regarding the affects of not doing anything on these burned acres. The effect of no timber harvest is displayed very well. However, the loss in future income, soil productivity, sedimentation, wildlife habitat, and recreational opportunities due to the mortality from bark beetle has not had an economic analysis displayed. Current levels of bark beetle and predictions by qualified entomologists indicated that the loss on adjacent stands will be much greater than the acres lost in the fire. Why was there not an economic analysis of this loss? **1**

3. In the "no action" alternative you show no direct, indirect, and cumulative effects to the grizzly bear. Why were there no effects? Hiding cover and food sources were certainly disturbed by the fire. Re-vegetation will occur much more quickly with man's help. A classic example is the Houghton Creek Fire. Areas that were replanted with trees, grass, and shrubs have recovered while those that had no activity have very little cover and show sparse grass and shrubs. **2**

4. Under Lynx the "no action" alternative appears to be beneficial. How was this decision made? Regeneration will not occur as quickly under natural conditions as if management occurs. The dense stands of Lodgepole Pine, 20,000 stems per acre will grow slower and shade the forest floor so very little shrubs and forbs will develop. Well-spaced healthy managed stands will lead to higher Lynx population. I believe the Swan Valley study has confirmed the benefits of managed stands. **3**

1

1. This issue is addressed in a broad context under the discussion of net present value. A more specific analysis is very problematical because the area involved is relatively small and adjacent to other burned areas and areas of infestation. The amount of additional bark beetle infestation in adjacent unburned stands is speculative at this time and the estimate of economic loss would be even more so. For this reason, and since the impact on adjacent stands is outside the scope of this study, the specific analysis of this issue is subsumed in the present value discussion.

2. The purpose of this analysis was to describe the effects of the alternatives as they relate to salvage actions. The fire effects are part of the existing condition and were described for grizzly bears in *APPENDIX F—WILDLIFE ANALYSIS, pages F-19 and F-20*. In accordance with MEPA, each action alternatives was compared to the existing condition (No-Action Alternative A) to assess the effects. Since No-Action Alternative A does not change the existing condition, no direct, indirect, or cumulative effects are expected.

3. Under this alternative, the current amount of denning habitat would be retained, while denning and foraging habitat would develop in the future (*APPENDIX F—WILDLIFE ANALYSIS, pages F-11 and F-12*). The high amounts of coarse woody debris would accumulate, thereby increasing potential denning habitat and greater structure for hares. Planting would occur under all alternatives and could speed the regeneration of habitat snowshoe hares; however, natural regeneration is expected to develop similar habitat for snowshoe hares in a reasonable time frame (20 to 30 years).

5. By not salvaging as much of the burnt area as possible I believe we are harming the Piliated Woodpecker population. Providing an abundance of large snags and forage encourages large populations for short time periods. This is a cruel way to manage wildlife!

4 6. I could find no reference in any of the action alternatives to the benefits that Big Game will receive from removal of some of the standing and down trees. Why were these not shown? In many areas there will be heavy down material that will impede movement for 50 plus years and slow regeneration of the new tree cover.

5 7. On page III – 3, it states there will be *"no direct effects to sediment delivery or water yield"*. How can this be possible? If it is true, why did the State and Forest Service spend considerable sums for erosion and sediment mitigation after the fire?

8. I urge you at a minimum to adopt Alternative B! This alternative will do the most for re-establishing a productive forest. It is also the least expensive to carry out and returns the most to the School Trust. Even though it covers 1,300 acres of burned area it is only covering 19% of the area burned. When you add the areas covered by the Winona Eastside Sale and the Coal Salvage Sale you still only have salvage on approximately 50% of the area burned.

6 9. It is highly unlikely that the quality of the trees being removed will support the expense of helicopter logging. If this method is used the amount returned to the School Trust will be significantly less. Past experience has shown that helicopter logging costs 2 to 2½ times as much as conventional logging on sites where you have high cut volumes per acres.

The DNRC and its staff are to be complimented on their efforts to salvage as much volume and value from the Moose Fire Area as they have proposed. Because of pressures from environmental interests to not do a complete salvage operation the return to the School Trust has been compromised for the next 80 to 100 years.

Thanks for your time and consideration.

Sincerely yours,

Ronald Buentemeier

Ronald Buentemeier
Timber & Lands Manager

RB/tc

Cc: Governor Martz

2

4. This subject was discussed in detail in *APPENDIX F–WILDLIFE ANALYSIS, pages F-4* and *F-42 through F-45*.

5. In the DEIS, page III-3, the analysis of No-Action Alternative A states that, "This alternative would have no direct effects to sediment delivery or water yield beyond those occurring because of the Moose Fire or under current management." This is a shortened version of the analysis displayed in *APPENDIX C–HYDROLOGY ANALYSIS* on *page 6*. The analysis states, "Direct and indirect effects of No-Action Alternative A would be similar to the impacts described under the existing conditions for sediment, nutrients, water yield, and water temperature." These statements mean that No-Action Alternative A would not alter the watershed conditions beyond what is occurring under natural and preexisting conditions

6. This study reflects your assertion that helicopter logging will return less money to the trust, and we would agree that, if the stands are not harvested this season, the values will not be sufficient to cover the cost of helicopter logging. If, after analysis, this turned out to be the "preferred" alternative, some of the value of the timber to the trust could be captured under this alternative, albeit a reduced amount. This is a reasonable alternative under the guidelines for an EIS analysis.

NORTH FORK PRESERVATION ASSOCIATION
80 Beaver Drive
~~P.O. Box 4~~ Polebridge, MT 59928

30 April, 2002

Brian Manning
Forest Management Specialist
Stillwater State Forest, DNRC
P.O. Box 164
Olney, Montana 59927

Dear Brian,

I want to thank you for the snowshoe tour on Monday of the old growth stands above Headhorse Road that were burnt in the Moose Fire. It have a better understanding of the condition of the old growth units and what you have to go through in order to plan timber sales. It also want to thank DNRC for the Moose Fire tour last fall.

These old growth units are best left alone despite your careful plans to provide for wildlife trees and to take the fire-killed trees (dead) and many of the dying larch. Perhaps only minimal damage would be done by logging, but with the steep slopes, it is best not to take chances. Except for the Moose Fire area, you should not log old growth stands.

In reading the summary and phase II draft EIS for the Moose Fire, I noticed how well they were written. It is possible to read a sentence just once and understand what is intended. The clarity of the documents and the straight forward answers to difficult questions are unusual in government documents.

A nonprofit corporation dedicated to preserving the integrity of the North Fork of the Flathead Valley on the western edge of Waterton/Glacier International Peace Park.

Thank you for providing input on this project. Your comments will be considered in the decision-making process.

North Fork Preservation Association

From an environmental standpoint (not an economic one). alternative E is the best choice With helicopter logging. no roads, no river crossing by temporary bridges and no logging of old growth units.

I thank you for allowing me to comment on a very complicated situation that has no easy answers.

Sincerely.
John Frederick. Jr
President. NFPA
406.888.5084

FLATHEAD VALLEY CHAPTER

PO Box 638, Kalispell, MT 59903

May 2, 2002

Mr. Brian Manning
Forest Management Specialist
Stillwater State Forest
Department of Natural Resources and Conservation
P.O. Box 164
Olney, Montana 59927

Dear Mr. Manning:

The Flathead Chapter of Trout Unlimited has reviewed the Draft Environmental Impact Statement (DEIS) for the Moose Fire Salvage and Reforestation Project – Phase II and has the following comments relative thereto.

A total of 70,000 acres of Federal, State, and private lands burned during the August and September 2001 Moose wildfire. The 6,876 acres of State Forest Lands burned represent approximately 9.8 percent of the total lands burned. The State of Montana is required by law to establish a salvage timber program that provides for the timely salvage of logging of dead or dying timber. In addition, the State of Montana must comply with Federal and State regulations as they relate to the protection of endangered or threatened species. Of particular concern to the Flathead Valley Chapter of Trout Unlimited is the protection of the watershed to support native populations of bull trout and westslope cutthroat trout.

Economic Issues:

Phase I was carried out in the fall and winter of 2001/2002 and resulted in an unspecified amount of money flowing into the various funds. The Phase II DEIS contains an Executive Summary, a Draft document written in layman's terms, and Resource Appendices which include the more technical aspects of the document. The DEIS for Phase II details the economic impact of the salvage logging and the Executive Summary excerpts some economic data from the DEIS. It appears that the Executive Summary shows **gross revenues** attributable to the alternatives. It does not specify the actual amounts that the School Trust Fund will receive nor does it reveal that a portion of the gross revenues offset expenses while another portion goes to the State Buildings Trust Fund. **This is confusing and misleading to the public.** Below are the figures from the Executive Summary: 1

Alternative	Students	Revenue $
A	-0-	-0-
B	110	1,739,531
C	55	879,505
D	74	1,377,608
E	33	647,734

1. The Executive Summary provides only limited information, usually summary results. For this reason, only net trust contributions are discussed in this part of the DEIS. If both gross and net figures are provided together with an explanation, the summary becomes too lengthy and can be confusing. More detailed information about the gross and net revenues to the trust and local economic impacts is contained in *APPENDIX G—ECONOMIC ANALYSIS*.

2. The effects of sediment on bull trout can be found in *APPENDIX D—FISHERIES ANALYSIS*.

3. As disclosed in *APPENDIX D—FISHERIES ANALYSIS*, no harvesting of trees would occur within the 100-foot SMZ of fish-bearing streams.

4. Larger scale maps of the action alternatives can be found in the *DEIS, pages II-7, II-9, II-11* and *II-13*. Portions of the proposed salvage would take place within 300 feet of feeder streams to Coal Creek, although none of the proposed salvage would occur nearer than 100 feet to a fish-bearing stream.

4. To clarify a point, Best Management Practices (BMPs) are guidelines for conducting forest activities, such as yarding logs and building roads, in a way that protects the soils and water quality. For instance, installing adequate surface-drainage and ditch-relief features on existing roads that are going to be used for log hauling are examples of following recommended BMPs.

The DEIS (pages G-4 – G-7) presents a significantly different economic picture. It lists the revenue actually going to the School Trust Fund, The State Buildings Fund, and the number of students supported for one year. Below are the figures from the DEIS:

Alternative	No. Students	$ School Trust Fund	$ Building Trust Fund
A	-0-	-0-	
B	110	663,000	258,000
C	55	330,000	120,000
D	74	497,000	124,000
E	33	200,000	100,000

In either case, gross revenues and/or the actual funds flowing into the School Trust and the State Building Trust funds from implementation of alternatives B, C, D, and E do not appear to be significant enough (by themselves) to risk or justify further damage to the bull trout and west slope cutthroat trout populations and habitat in the Coal Creek Drainage. However, when the revenues are considered in conjunction with the figures in Table III-8, page III-29 showing that jobs are created or preserved, the jobs are some of the highest paid in the state, and considering that wages are spent three to four times as they flow through the economy, the economic impact to the region is significant.

Fishery Impacts:

Bull Trout are Federally listed as "threatened" under the endangered species act. Westslope Cutthroat trout are considered a "Class A Species of Special Concern" through a joint listing developed by DFWP and the Montana Chapter of the American Fisheries Society. Neither species are mentioned in the Executive Summary. The Coal Creek drainage located within the wildfire area supports native populations of both bull trout and westslope cutthroat trout. Both species in Coal Creek have been genetically tested and have been identified as pure strains. Therefore, Moose fire salvage and reforestation activities must be carried out in a manner that protects these species and their habitat.

Annually, since 1982, bull trout redd counts have been conducted in the Coal Creek drainage. Historically, the Coal Creek drainage supported about 10 percent of the Flathead Basin bull trout redds. By 2000 the bull trout redd count declined to less than 2 percent of the Flathead Basin redd count. This downward trend resulted from a variety of activities including (without limitation) agriculture, residential and industrial development, mining, livestock grazing, road building, timber harvesting and past forestry practices.

Timber harvesting...log skidding, road building, riparian tree harvesting, clear-cutting, splash dams and the effects of these practices (which have been referred to as Best Management Practices or BMP's) have damaged and continue to damage the watershed through erosion, reduction of loss of in-stream woody debris, and increased sedimentation.

As a result of the Moose Fire, a 7.1 percent increase in water flow is projected for Coal Creek in 2002. Adopting BMP's for salvage logging does not guarantee that there will be no erosion or increased sedimentation, and therefore, no impact on bull trout or west slope cutthroat. Research and study of bull trout and their habitat in Coal Creek has shown that bull trout populations and reproduction are adversely impacted by even slight increases in fine sedimentation. The DEIS has stated that fine
2 sediment values in the Coal Creek drainage are at or near critical levels. **Given the already critical level of sedimentation, it appears that salvage logging cannot be carried out without increasing sedimentation to the point that bull trout reproduction is impossible.**

Harvesting of large trees adjacent the streambeds would further diminish the ability of the habitat to restore itself naturally for the growth cycle of large trees (potentially 80 to 100 years or more) therefore,
3 erosion would further increase sedimentation over a longer period of time. Trout Unlimited is very concerned about the proposed logging of steep slopes adjacent Coal Creek and its feeder streams as the increased water yield will undoubtedly increase erosion and sedimentation in these areas.

The maps in the Executive Summary are small. At a glance, the maps do not indicate that logging will
4 be carried out within 300 feet of Coal Creek or feeder streams. Setbacks of at least 300 feet must be included in the logging plan and incorporated into Appendices C - HYDROLOGY and I - SOILS. The preservation and future availability of large woody debris to maintain channel stability, and in-stream habitat complexity while reducing erosion and sedimentation is critical to fish reproduction and survival.

3 The potential for naturally occurring negative impacts on fish populations in the Coal Creek drainage resulting from the Moose wildfire has been identified in the DEIS for the Moose Fire Salvage and Reforestation Project. In alternatives B and C the building of 3.4 miles of temporary roads, installing bridges and later removing them is considered along with ground based, downhill cable yarding and
5 truck transport of timber harvested. Hastily constructed, temporary dirt/gravel roads and the resulting dust conditions associated with dirt roads and heavy truck and equipment traffic will also contribute to the availability of fine sediment in the air, on the ground, and ultimately, in the water. Installing culverts to avoid erosion will surely result in higher water yields and result in longer peak flows. Notwithstanding mitigation efforts, these activities will undoubtedly exacerbate the expected, naturally occurring negative impacts of elevated stream temperatures, increased nutrients (phosphorus and nitrogen) by adding fine silt to the already critical levels in the watershed.

To a lesser extent, Alternatives D and E would adversely impact the watershed in much the same manner as discussed in the previous paragraph. Alternatives D and E would be preferable to alternatives B and C because they negate the impacts of building and removing temporary roads and the airborne dust (silt) associated with heavy truck and equipment traffic over dirt roads. Our preference is Alternative A. Recognizing the potential economic impact on the area the Flathead Chapter of Trout Unlimited could support Alternative E if sufficient control and oversight is available to mitigate sustained impacts on bull trout and westslope cutthroat trout. The mitigation would include the adoption of INFISH standards on streamside setbacks (300 feet) into the scope of the Alternative.

Our contact person on the TU Conservation Committee is Frank Hanson (406) 752-5349.

Sincerely,

Glen D. Anacker
President

Trout Unlimited
Flathead Valley Chapter

MOOSE FIRE SALVAGE AND REFORESTATION PHASE II PROJECT

ACRONYMS

ARM	Administrative Rules of Montana
BAER	Burned Area Emergency Rehabilitation
BMP	Best Management Practices
BMU	Bear Management Unit
C.S.	Common School Grant
dbh	diameter at breast height
DEQ	Department of Environmental Quality
DFWP	Montana Department of Fish, Wildlife and Parks
DEIS	Draft Environmental Impact Statement
DNRC	Department of Natural Resources and Conservation
EA	Environmental Assessment
ECA	equivalent clearcut acres
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FEIS	Final Environmental Impact Statement
FI	forest improvement
FNF	Flathead National Forest
ID Team	Interdisciplinary Team
IGBC	Interagency Grizzley Bear Committee
Land Board	Board of Land Commissioners
MBF	thousand board feet
MCA	Montana Codes Annotated
MCH	Antiaggregate Pheromone
MEPA	Montana Environmental Policy Act
MMBF	million board feet
NPS	National Park Service
NWLO	Northwestern Land Office
OG	old growth
SFLMP	State Forest Land Management Plan
SLI	stand-level inventory
SMZ	streamside management zone
TMDL	total maximum daily load
TPA	trees per acre
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
124	Permit Stream Preservation Act Permit
3A	Authorization A—Short-term Exemption from Montana's Surface Water Quality Standards

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